VIDEO GAMES™

Behind the Scenes at Coleco and Atari

K48964
JUNE 1983
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Canada
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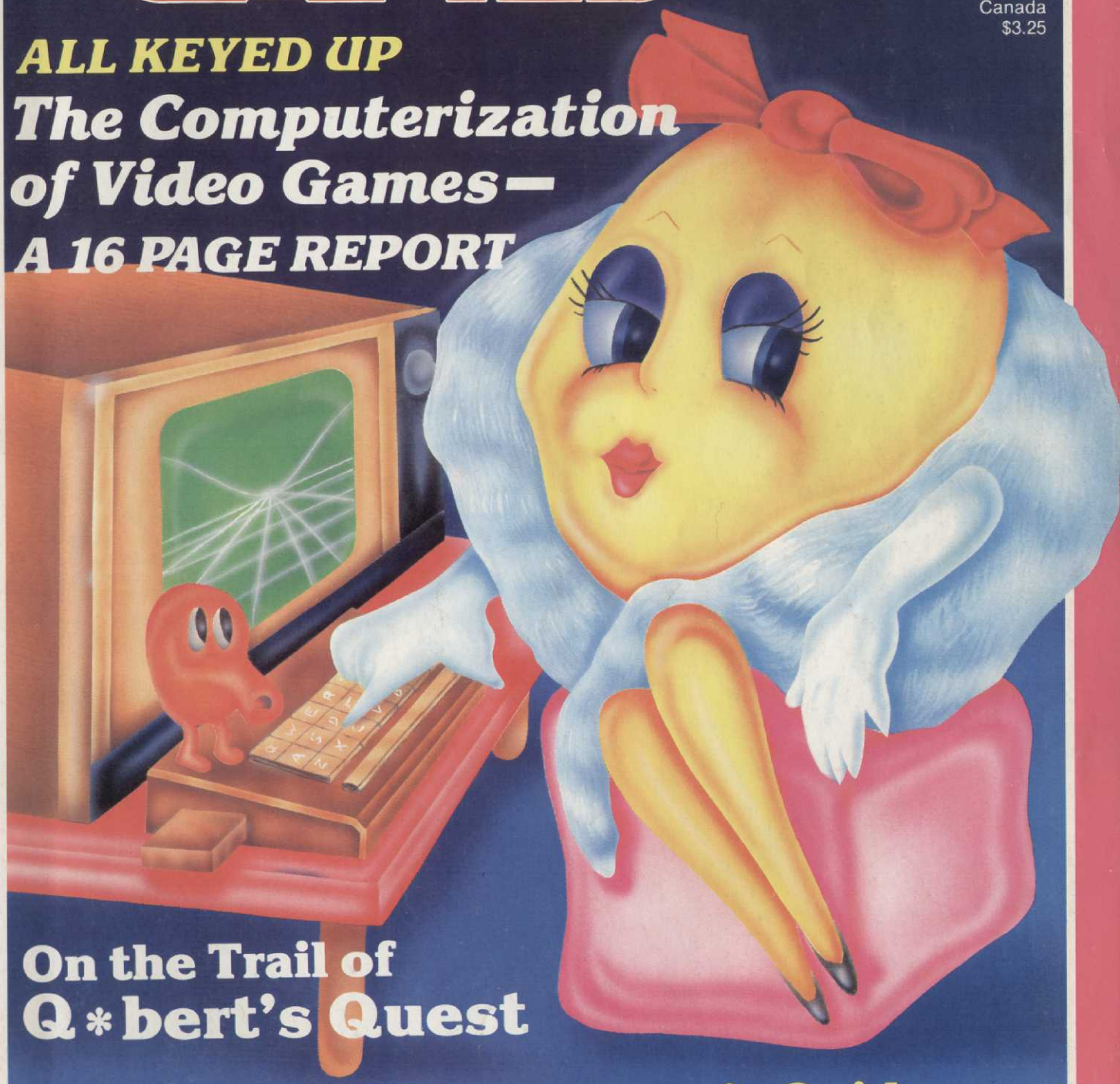
ALL KEYED UP
The Computerization of Video Games—
A 16 PAGE REPORT



On the Trail of Q*bert's Quest

A Programmer's Guide to the VIC-20

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THE BEST GA
JUST GOT

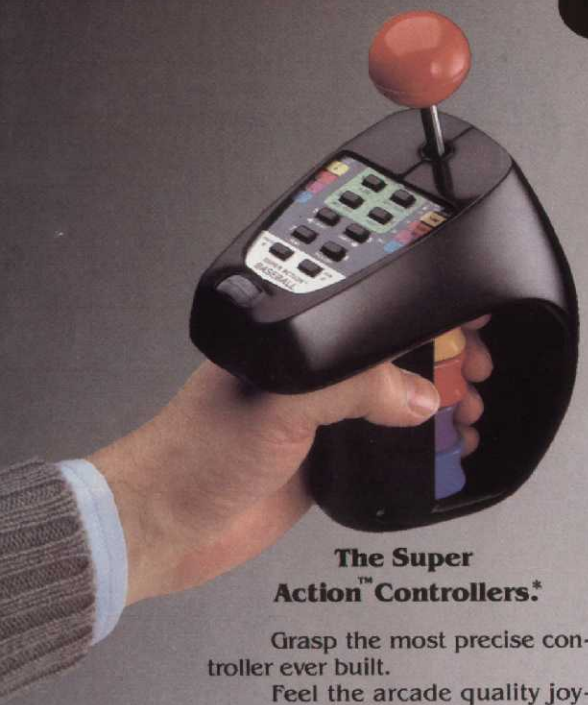
When you own ColecoVision, you own a powerful computer.

A computer that creates graphics more advanced than any other video game system.

And all the new game modules you see here are just the beginning.

Soon, there'll be an astonishing breakthrough that will allow ColecoVision to operate as a multi-functional home computer.

Which means the ColecoVision you own today, is the system of tomorrow.



The Super Action™ Controllers.*

Grasp the most precise controller ever built.

Feel the arcade quality joystick and built-in speed roller.

Use the multiple player select buttons to move as many as four different players at once.

Plot elaborate sports games strategies in advance. On a twelve button keypad.

The Super Action™ controller set comes with Super Action Baseball© as a bonus. And will be available this June.

The Super Game™ Module.*

Boost the memory of your ColecoVision to equal the memory of most coin operated arcade games.

Achieve over 15 times the memory of an Atari 2600® VCS™ cartridge.

Unleash astounding graphic resolution and game variations that surpass even the real arcade.

The Super Game Module can produce over 100 different screens, when required. It displays bonuses. Intermissions. Even lets you enter and store your initials in the "Hall of Fame". The Super Game Module will be available this August.

And it comes with two bonus Super Games: Buck Rogers™ Planet of Zoom™ and Gorf™.

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ME IN TOWN
BETTER.

The Expansion Module.

Play more games on ColecoVision than on any other system.

Play any cartridge made for the Atari 2600® VCS™ by Atari, Activision,™ Imagic,™ Sears Video Arcade™ and more. The expansion module is available now. So, now choose almost any game made, and play it on the best system ever made. ColecoVision.

The Driving Module.

Take the wheel of a high performance race car. Step down on the accelerator. Slam shift.

Steer through tunnels. Around curves. Over oil slicks. The Driving Module is available now with Turbo,™ the hit arcade game, as a bonus.

And Destruction Derby™ and many others are coming soon.

Dazzling New Games.

Arcade games. Sports games. Adventure games. And more. Games like Donkey Kong Junior.™ Space Panic.™ Looping.™ Pepper II.™ and Space Fury.™ All available now.

Games like Destruction Derby™ and Super Action Football© coming in June. Rocky,™ SubRoc,™ Mr. Do!™ coming in July. And Time Pilot™ in August.

ColecoVision is the first truly expandable video game/home computer system. And today is just the beginning. Because ColecoVision is the system of tomorrow.

The Roller Controller.*

Quick. Responsive. The Roller Controller is a whole new way to play most joystick controlled ColecoVision games.

It gives you a 360 degree field of movement. Lets you fire up or down. And the faster you spin the ball, the faster your on-screen object reacts.

The Roller Controller is coming this July. And, as a bonus, it comes with Slither,™ the lightning fast arcade game.

ColecoVision™

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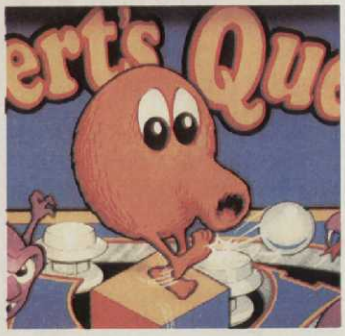
VIDEO GAMES

Volume 1, Number 9 June 1983

page 66

page 11



page 72

page 30

page 34

FEATURES

VIDEO GAMES Interview: Arnold C. Greenberg 22

As far as video games are concerned, the best is yet to come, according to the president of Coleco. By Roy Trakin.

Sights to Behold in the Video World 30

When George Opperman sees a blip on a screen several million images flash through his head. But only a few of these will grace the Atari coin-op cabinets, posters and advertisements seen throughout the country. Mark Osmun steals some time out of Opperman's hectic schedule.

The Computerization of Video Games 34

Turning your home game system into a computer is a snap. Literally. Anne Krueger, Suzan Prince and Mark Brownstein report on what's in store for owners of Intellivision, Odyssey, Astrocade, Coleco, and Atari game systems.

SPECIAL SECTION:

Video Sports Games Illustrated, Part 2 55

Take out the gloves, line up those pins! Noah Greenberg reviews the hockey, bowling, basketball, golf, tennis, boxing and skiing carts for video games sportsmen.

DEPARTMENTS

DOUBLE SPEAK 8

Some words of advice from our readers.

HYPERSPACE 6

Insights into the issue at hand.

BLIPS 10

Three ring video games, more fun with Journey, staying in style in the arcades, Atari surveys the coin-op scene, Pac-Man—on the road and in the drugstores.

HARDSELL 52

Mark Andrews delivers a programmer's perspective of Commodore's VIC-20.

SOFT SPOT 61

From simple to sublime, the latest offering of home carts has something for everyone. Perry Greenberg reviews Venture, Smurf Rescue, Bomb Squad, Gopher, Space Spartans, Centipede, Turmoil and Nexar.

COIN-OP SHOP 66

The latest batch of arcade games indicate a return to strong game-play and continued improvement of graphics, new challenges and bizarre themes. John Holmstrom reviews Xevious, Star Trek, Bagman, Bump 'n' Jump, and Quantum.

FLIP SIDE 72

Q*bert's taken his cast of zany characters and taken them over to pinball. In the first installment of this new column, Zelmo tells all about Gottlieb's latest.

YOUTH BEAT 74

Having a home video game party can be both fun and profitable. Rawson Stovall gives hints on how to throw one without irritating mom.

BULL'S-EYE 75

Milton Bradley's back in the Wall Street eye, reports David Leibowitz.

BOOK BEAT 76

Stephen Manes' book *Video Wars* sheds modern light on the age-old conflict between teens and adults. Reviewed by Anne Krueger.

COMIC RELIEF 79

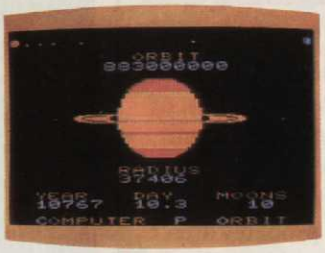
The saga continues! Chapter six of Matt Howarth and Lou Stathis' "The Zydroid Legion;" Gene Williams' "Raiders of the Lost Arcade, and Peter Bagge's "The Video Kid."

STATS 82

Cover illustration by Michael Waldman

IF YOU OWN A COMMODORE COMPUTER, YOU KNOW IT CAN DO ALL THIS.

BUSINESS



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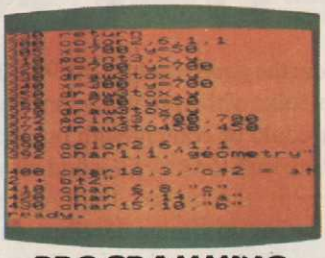

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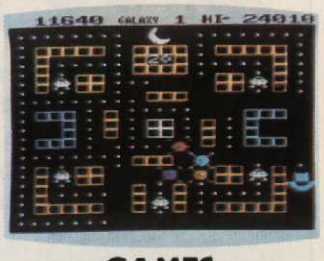
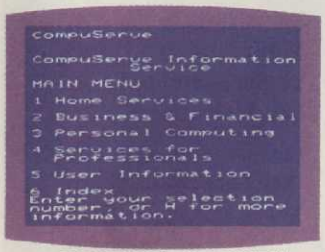


GAMES

BUT DID YOU KNOW FOR ABOUT $100, YOU CAN ALSO GET IT TO DO ALL THIS?



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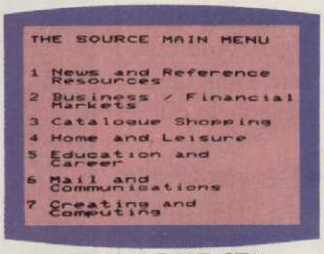

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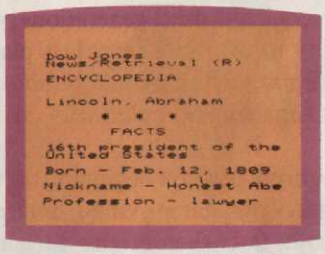

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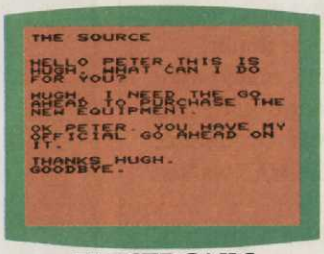

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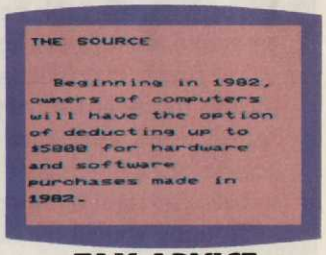

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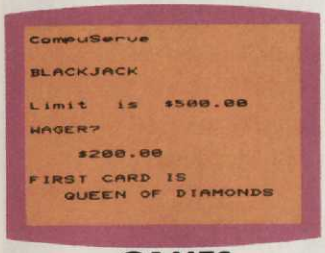

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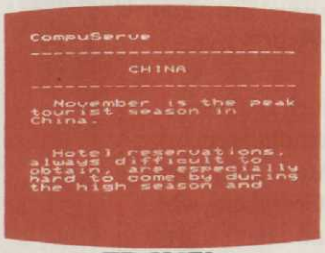

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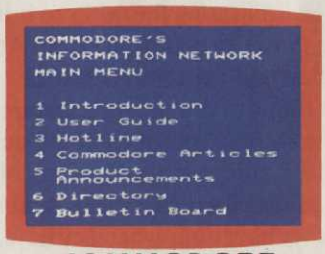
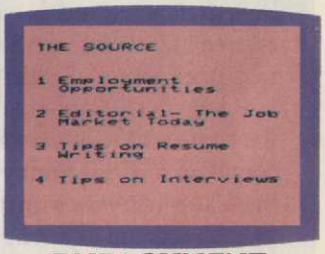


COMMODORE INFO. NETWORK



EMPLOYMENT OPPORTUNITIES

The screens at the top of the page show a few examples of how versatile the VIC 20™ or Commodore 64™ can be with the addition of Commodore software.

The screens below them give you a few examples of how much more versatile they can be with the addition of a Commodore VICMODEM.

For around $100, the Commodore VICMODEM will turn your VIC 20 or Commodore 64 computer into a telecomputer.

To make matters even better, Commodore includes a few little extras (such as a free hour's time on the two most popular telecomputing services) that add up to a value of $197.50* A nice return on an investment of about $100.

Most computer companies think it's reasonable to ask as much as $500 for a modem that'll give you telecomputing capabilities such as ours.

However, with a VICMODEM priced at around $100, we think we're being a lot more reasonable. Don't you agree?

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HYPERSPACE

It used to be so simple back in the good old days of 1982. There were personal computers for the other folks with keyboards, peripherals and a host of *foreign* languages. While we could be content with our video game systems, our only concern was to keep up with the new titles and maybe the contemplation of picking up a replacement stick or two. But times have changed.

For most of us, recent as well as upcoming developments probably aren't that much of a surprise. After all, the warning signs have been blatently apparent that a new era would begin. The only issue is when and how, given the fact that many home computers are being positioned as game systems, plus a whole lot more. Meanwhile, the programmable video game units, which have prevailed for a number of years, were finally being modified and upgraded in anticipation of the time when they might want to offer expanded capabilities. We witnessed the release of second and third-generations systems that seemed to be limitless in their ability to do more than just play games. Add-on modules alone proved that almost anything could be hooked into a unit that would expand its operating capacity and potentially change its role in our day-to-day lives.

And now here we are at the brink of a new beginning for what has become a legendary standard: the home video game system. Interestingly the events that have gotten us to this point trace their origins back a little more than a decade ago when the first models were introduced. In retrospect the evolution has been a remarkable one, considering that an entire society has so readily embraced a totally new technology, almost without question or doubt.

The funny thing is that video games, arcade and home variety, really paved the way for the growth of personal computers and the increasing overlap that rapidly followed. Since 1983 is shaping up to be a year of notable achievements in terms of hardware development, *VIDEO GAMES* wanted to keep you right on top of the events as they happen.

To bring you all the inside information, we have assembled a group of knowledgeable, curious and intrepid writers to search out all the facts regarding the major home game systems. Beginning on page 34 you get a first-hand look at how keyboards will be infiltrating the ranks to bring previously considered impossible operating power to everything from Atari's VCS to Mattel's Intellivision, ColecoVision and even the Astrocade.

But there's still more to be found in this month's features such as a behind-the-scene visit with a man responsible for much of the outstanding artwork coming out of the Sunnyvale, California headquarters of Atari. Back East there's an interview with the guiding force of Coleco, Arnold Greenberg, who gives an account of just how they have done what they have, and what's still to come. It's an enlightening perspective on a true American success story that begins on page 22.

Also in this issue of *VIDEO GAMES* are the first appearances of two regular columns we hope you find interesting and enjoyable to read. Youth Beat, page 74 features the advice and suggestions of Rawson Stovall on how to throw a video game party at home. Stovall, of Abilene, Tx., is the author of a syndicated newspaper column called "The Video Beat."

"The Flip Side" appears on page 72 and expands *VG*'s already extensive coverage of the coin-op industry to include the efforts being undertaken above and beyond pure video games, whether it's the design of a new pinball machine, a model that might incorporate both categories of play, or one which provides a format so different, it can't be ignored for what it may represent as a possible addition to the standard game room bill of fare.

And there's still more, including reviews in the newest arcade games, home carts and the second part of Video Sports Games Illustrated.

—Editor

VIDEO GAMES

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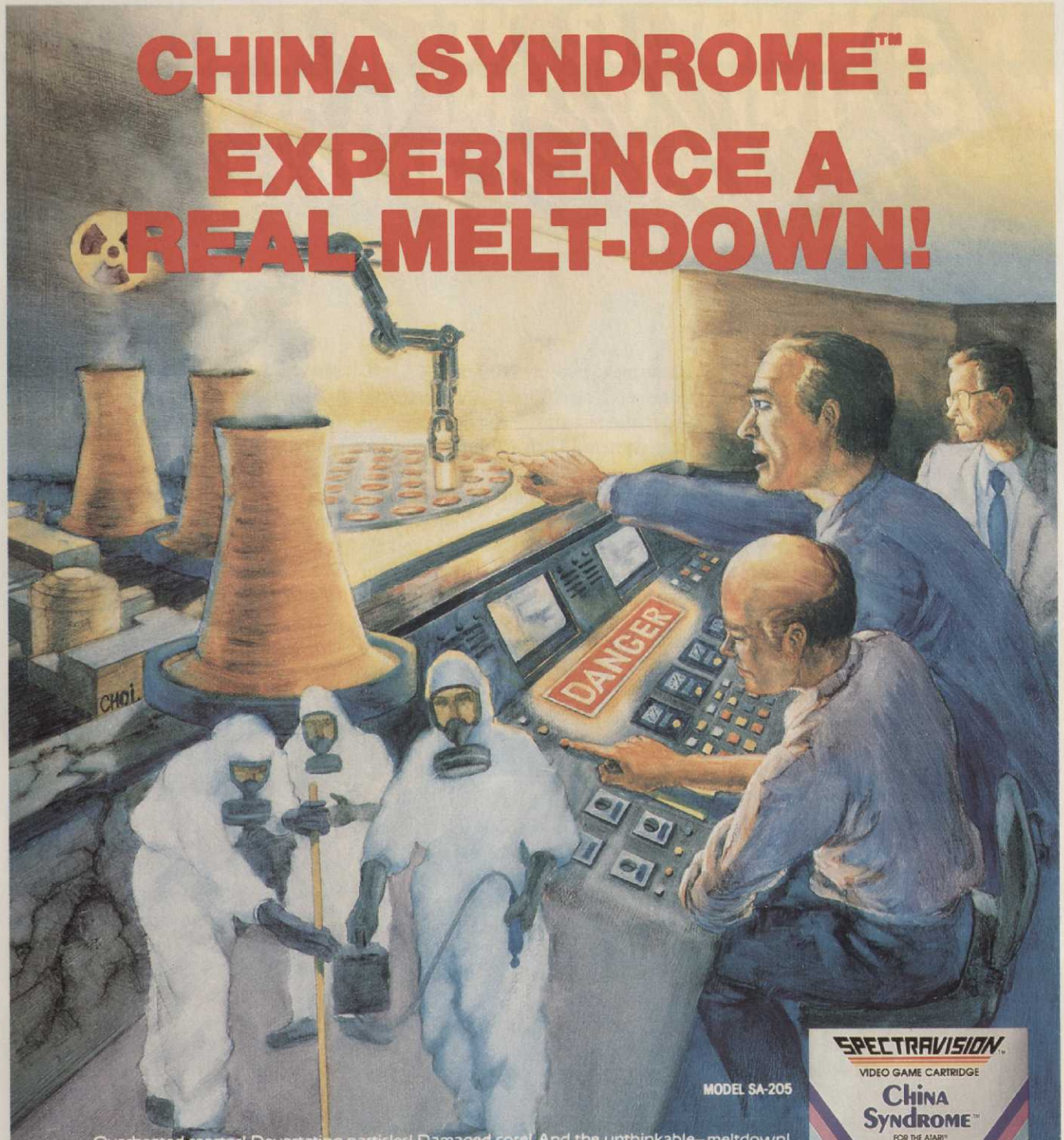

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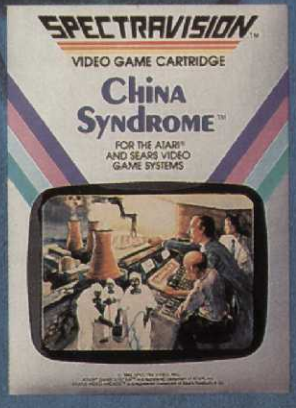
For years, the nuclear power plant at Spectra Island has provided safe energy. Now, an earthquake has changed all that. The lives in Spectraville are now in your hands. Dangerous particles must be contained. The Decontamination Diffusion Vacuum must be moved quickly. It's challenging, and at times, frustrating. But it must be done to prevent a major disaster.

Like all games from Spectravision™, China Syndrome™ is incredibly lifelike. With more realistic sound effects. More colorful graphics. More action and challenge. Varied skill levels. Even an introductory demonstration of the game. So try new China Syndrome™ soon. You'll agree that there's only one word for it's realism — unreal.



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Spectravision Video Games fit the Atari™ VCS System and Sears Video Arcade™

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Double Speak

A Small Price to Pay

There is something I'm really mad about. You see video game manufacturers won't even consider ideas from outside their companies, especially from kids? I think they're making a big mistake. Who better to get ideas from than the kids. Most people who play video games are under 18, and since they play the games, they'd be able to know what they want to see in a game. I think that arcade companies should consider game ideas from the outside. Then, if they were interested, pay the person who sent the idea maybe $10.00 to draw up a sketch of what the game actually looks like. Who knows, this small price just could make a game idea of an unknown person into a big arcade hit for the company.

Stephen Hilton
Altoona, Pa.

Although the idea is a sound one, and many companies are opening up their doors to outside designers, you're selling yourself short. You may want $10 to start with, but what about royalties and options on your next titles? Seriously, VG will be taking a closer look at the creation and evolution of games in a future issue. So keep a look out for it.—Ed.

ColecoVisioned

Thanks for the Dec. issue. I now have all your issues. I enjoyed the article on the Consumer Show in the April issue.

I was especially interested in the sneak peeks at the new products for the ColecoVision system. Seeing the graphics of boxing and baseball shows how drab Intellivision is. George Plimpton will have to eat his words now. I dare him to compare Intellivision's baseball with ColecoVision's.

I like the Expansion Module #1. It allows me to play my 140 Atari VCS cartridges on ColecoVision. I am planning to get the rest of the cartridges for the Atari system. Then I'll have 200 cartridges to use on the module.

The two things I am still waiting for are the super game module that expands memory to 128 K ROM and the keyboard that allows you to program your own games plus personal computing.

Keep me informed on the latest news from ColecoVision.

Larry McKinney
Adamstown, Pa.

For the Record

I found your April issue to be, as usual, outstanding. Your article on the Las Vegas CES convention was above par compared to the competition's coverage of this event. The photos were incredible, especially the ColecoVision pictures. How about some more coverage on "the best" system on the market in future issues?

As I read through the magazine I found your article on Jim Levy interesting, the video game quiz fun, and the story of how Q*bert and Joust came into existence to be great reading. (I really like the innovation of 'mucas bombs'!)

And just to set the record straight, the movie that is employed in Astron Belt (p.17) is not from an epic called *Astron Belt*, but a rather bland Japanese effort entitled: "Message From Space" (made in 1978 for the Toei Studios of Japan, starring Sonny Chiba and the late Vic Morrow). The movie was a rip-off to try and imitate the *Star Wars* adventure, and was later turned into a weekly TV show in Japan where it was eventually cancelled.

Steve Harris
Gladstone, Mo.

News for the Confused

I bought your April edition of *VIDEO GAMES* and I have a question about your CES section. It's about the Spectravideo's SV-318 home computer for the ColecoVision Expansion Module #3. On page 44, under the photo, it says that it has a 32 K RAM memory and costs $70.00. Then I read in the February edition of *Electronic Fun with Computers & Games* magazine that Spectravision's new computer will cost under $300 and has a 32 K RAM memory expandable to 144K RAM memory. My question is, is this the same home computer or a different one and what is the difference?

Dan Young
Black Hawk, S.D.

To clear up the confusion concerning the SV-318 and ColecoVision expander module, the connection is Spectravideo and ColecoVision share a common graphics chip. Therefore, Coleco relatively easily built an expansion module that would allow their game cartridges to be played on the SV-318, and Spectravideo, as well, made an adaptor to the ColecoVision, the SV-603. Both units retail for about $70.00.—Ed.

Show and Tell

In the April issue of *VIDEO GAMES*, there was an article about the Consumer Electronics Show. I was wondering when and where the next show will take place.

Chris Parker
Austin, Tx.

The next CES will be staged in Chicago from June 5th through June 8th, but unless you're a member of the industry, don't make travel plans since the convention isn't open to the public.—Ed.

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Compare the Vectrex Arcade System with any ordinary home video game system. You'll discover why most Atari and Intellivision players say Vectrex plays more like real arcade games than their own systems!

Vectrex™
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THE VECTREX™ ARCADE SYSTEM!

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BLIPS

Step Into the Ring

Attention all video gamers: the world's largest arcade and video circus will be traveling your way very soon. The 40-city tour, sponsored by Meeting Planners, Inc. of Boston, Mass., kicks off in Boston on June 3 and will move from town to town around the U.S. through June 1984 when the circus returns to its home port. The Barnum and Bailey-like extravaganza will bring the latest in video entertainment, allowing manufacturers the opportunity to introduce the newest games, and the public hands-on evaluation.

The exposition will be divided into three events: the World's Largest Arcade, the Video Circus and the Superstar Pro Tour.

Now for a glimpse of what's to come. The arcade will display 1200 to 2000 coin-op video machines (the number of machines will depend on the size of each city's convention center). The machines will be set on free-play, but playing time will be limited to 10 minutes per turn to allow for the maximum number of participants.

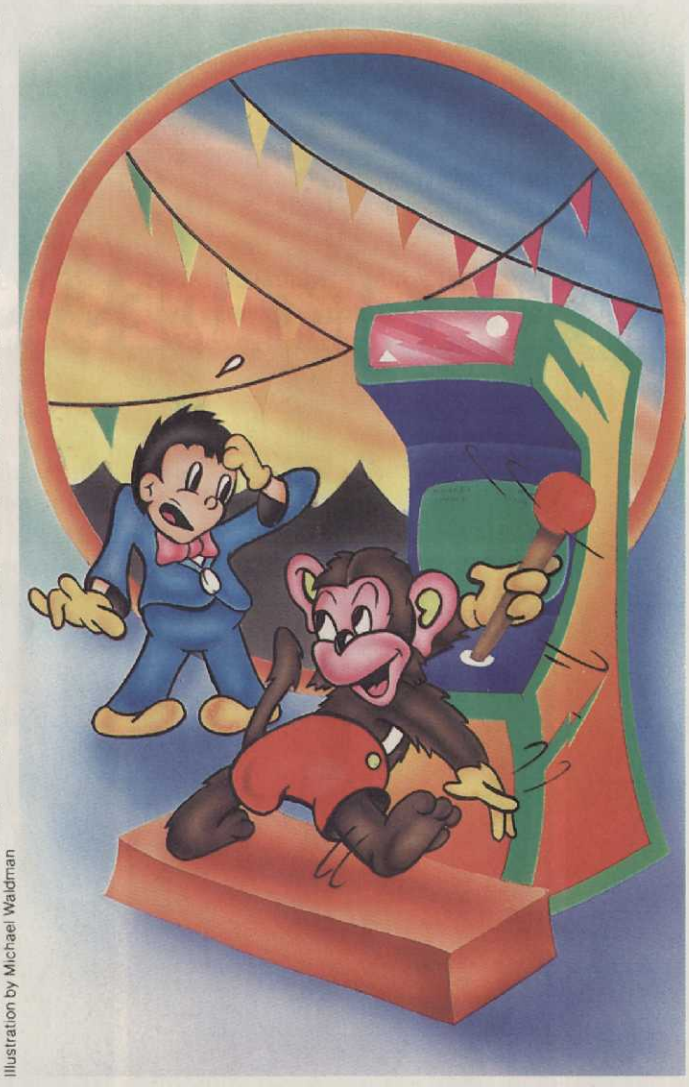

Illustration by Michael Waldman

The video circus will feature a traditional circus-like atmosphere with a three-ring video show. One ring will spotlight the rock band Video Experience, who will perform against the high-tech ambience of the arcade. A second ring will feature the antics of favorite video games characters, such as Pac-Man and Donkey Kong. And the third ring will present the Chimpanzee/Pac-Man Challenge, where chimps specially trained in the game will take on human opponents.

In the third event, the Superstar Pro Tour, players will have an opportunity to challenge 30 superstar players (three for each of 10 popular arcade games). These superstars will travel with the exposition throughout the year and compete for cash prizes during the tour. Any players from the cities that the show travels to may challenge these top players in an attempt to capture their title.

Also featured in this event will be the Twin Galaxies Arcade International Scoreboard. Walter Day Jr., owner of the Twin Galaxies Arcade, Ottumwa, Iowa, will act as grandmaster and consultant of the Video Circus. Players will be able to see how their scores rank internationally on Day's computerized system. Players and their scores will be listed in the *Guiness Book of World Records* for events held in all cities prior to the book's cut-off date of August 1, 1983.

The hours of the three-day, three-event show will be from 10 a.m. to 10 p.m. on Friday, Saturday and Sunday. No school-age children will be admitted on Friday before 3 p.m. without a parent or guardian while school is in session. A combination three-event ticket can be purchased at the door.

Following is a listing of the cities that will host the tour.

1983	City	Place
June 3, 4 and 5	Boston	Bayside Expo Center
June 10, 11 and 12	Washington	Wash. Convention Center
June 17, 18 and 19	Philadelphia	Philadelphia Civic Center
June 24, 25 and 26	Atlantic City	Atlantic City Aud. & Conv. Hall

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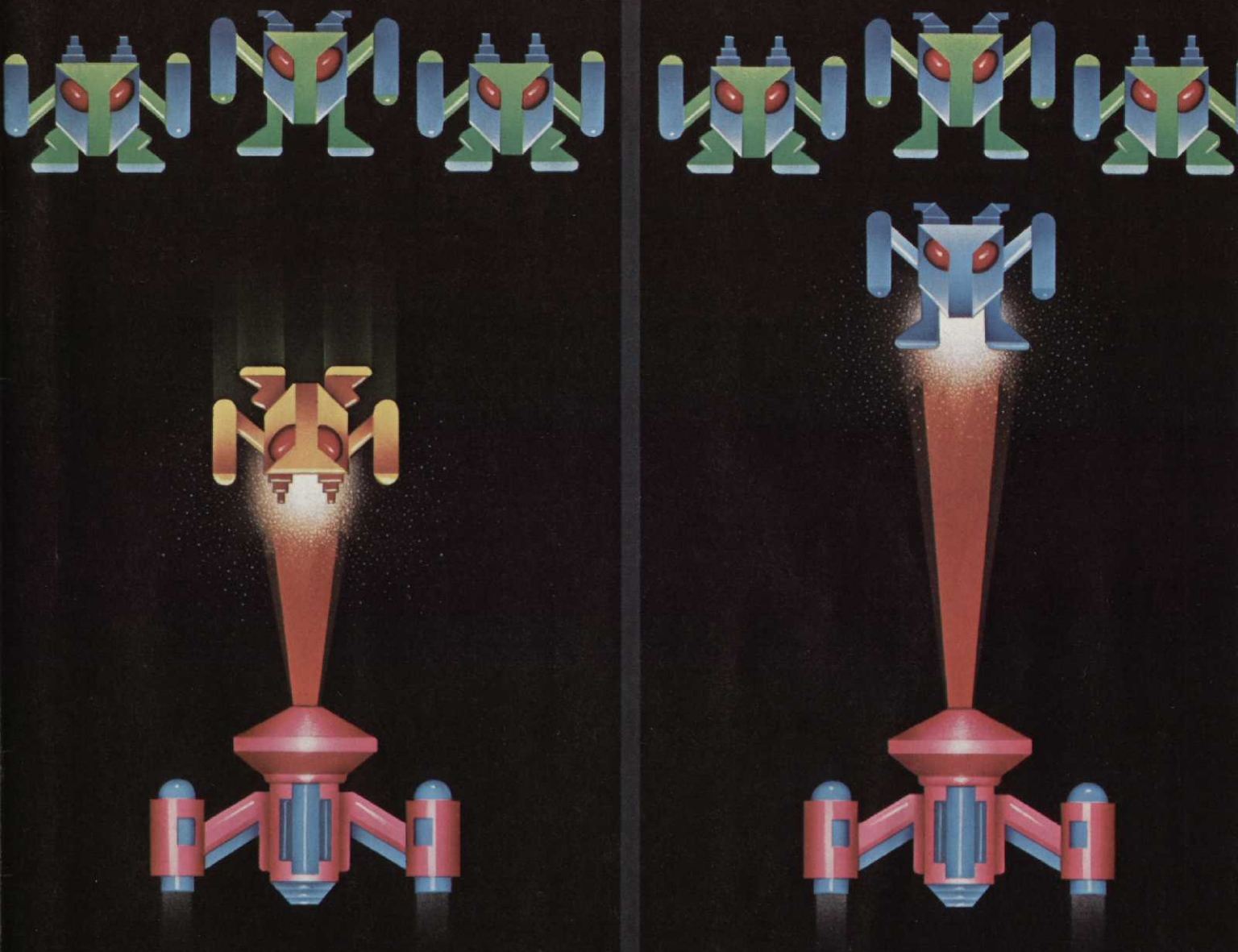

Which player is about to score with flying colors?

Better learn fast. Here comes Galaxian* from Atari®.

Pilot to co-pilot. Galaxian invaders are approaching your home. And they're only from Atari for use with the ATARI® 2600,™ Sears Video Arcade† systems, and the ATARI 5200™ SuperSystem.

These Galaxians look, sound, and act no different than the Galaxians you've battled in the arcade. They swoop, dodge, and fire with equal cunning. So you have to know your stuff.

Like the player on the left. He's about to hit a flying yellow Flagship for 150 points. But his opponent, on the right, will score only 30 points for hitting the stationary blue Drone. Tough luck, rookie.

If you want to know even more about which Galaxians to hit, hit the stores for Galaxian.

ATARI

A Warner Communications Company.

BLIPS

July 8, 9 and 10	Baltimore	Baltimore Conv. Center	Sept. 16, 17 and 18	Atlanta	Atlanta Market Center
July 15, 16 and 17	Pittsburgh	Pitts. Conv. & Expo Center	Sept. 23, 24 and 25	Memphis	Cook Convention Center
July 29, 30 and 31	Cleveland	Cleveland Conv. Center	Oct. 21, 22 and 23	Omaha	Omaha Civic Auditorium
Aug. 12, 13 and 14	Niagara Falls	International Conv. Center	Nov. 25, 26 and 27	Chicago	O'Hare Expo Center
			Dec. 2, 3 and 4	Tulsa	Tulsa Expo Center
Aug. 19, 20 an 21	St. Louis	Cervantes Conv. Center	Dec. 16, 17 and 18	Kansas City	Kansas City Conv. Center
Aug. 26, 27 and 28	Milwaukee	Milw. Expo & Conv. Ctr. Arena	Dec. 22, 23 and 24	Indianapolis	Ind. Conv. Expo Center
Sept. 2, 3, 4 and 5	Detroit	B & C Halls - Cobo Hall	Jan. 6, 7 and 8	Oklahoma City	Myriad Convention Center
Sept. 9, 10 and 11	Louisville	Kentucky Fair & Expo Center			

—Linda Moran

It's the Little Things That Count

If it's true that the clothes make the man then, these days, video game players with only a so-so ranking can command the respect of their fellow arcaders. Well...it couldn't hurt to try.

With an eye toward function, fashion, not to mention the profit incentive, individuals and companies are offering up a host of products designed to keep players from blistering, straining and—heaven forbid—losing their quarters. One such person, Nancy Heck, owner of Nancy and Co. (22594 Mission Blvd., Suite 302, Hayward, Calif. 94541 415/582-2246), created the Videomax video game glove after her own experiences as an avid game player and an independent study among her game-playing friends. The most common ailments, she discovered, were blisters, suffered primarily on the middle finger and thumb. Another problem often reported was sweating.

So Heck went to work on her glove design, covering up the prone fingers and padding areas, such as the palm, to prevent slippage during an especially tense game. The gloves ($6.95 plus .45 tax and $1 for shipping and handling) come in white, navy blue and gold and are available for both right- and left-handers in sizes for men, women and children. "It's both a comfort and a status-symbol item," Heck says. "Especially among younger children. For them, it's like, 'Wow, he's so good he's got his own glove!"

Photo by R. Scott Craig

Hold onto your quarters, trackball and directional discs—fashionably. These accessories may be just the thing to keep you confident.

Joseph Nicoletti, of Nicoletti Productions, (P.O. Box 2818, Newport Beach, Calif. 92663 213/203-9533) and his wife, Cheryl, have added video game accessories to their entertainment company. The first product, introduced earlier this year, is the VCH Video Coin Holder ($7.95). Constructed of nylon, the VCH is looped through the belt and contains a transparent coin holder accessed via a velcro flap. It holds up to $9 (or 36 plays) in quarters and comes in Galactic Red, Electric Blue, Lunar Lavendar, Cosmic Black, Military Camo(flauge) and Orbit Green.

Video Masters (69 Smith St., Mt. Clemens, Mich. 48043) is marketing Thumb Savers ($3.95 plus .50 postage and handling per pair), soft plastic cushions that affix to the directional discs of the Intellivision system. According to the company, the Thumb Saver helps to "stop thumb soreness from video overplay," "improve home video control response" and adds "a touch of class" to the home game set-up.

—Sue Adamo

If You Liked Donkey Kong, You'll Love JUMPMAN!

JUMPMAN. THE COMPUTER ACTION GAME.

If you liked jumping over barrels and climbing ladders to save damsels in distress, you'll love the blazing excitement of JUMPMAN. Your incredible speed and jet boosters let you leap from girder to girder, scale ladders and ropes to disarm the bombs planted in Jupiter Headquarters. But it's not easy and there are thirty levels of difficulty. You'll have to dodge missiles, killer robots, flying saucers, crumbling girders and vanishing escape Routes. In the heat of battle, JUMPMAN must keep a cool head.

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The Award-Winning Computer Games

Epyx, 1043 Kiel Court, Sunnyvale, California 94086

JUMPMAN Designed by Randy Glover

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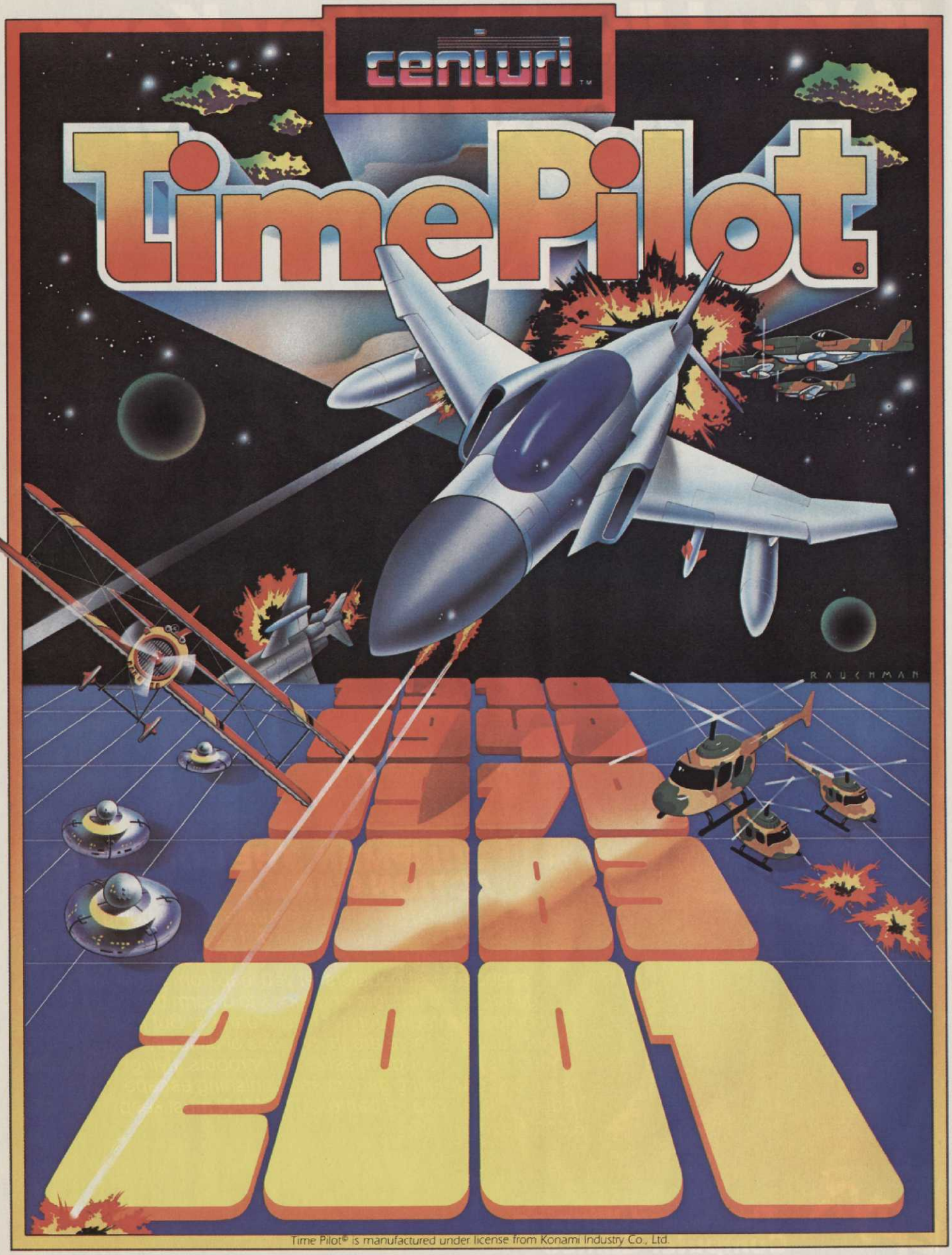

Time Pilot© is manufactured under license from Konami Industry Co., Ltd.

If You Have Ever Dreamed Of A Journey Through Time...

What's in a Name?

Now, from the people who brought you negative response record and tape clubs comes the latest endeavor—the video game club. Columbia House, a marketing arm of CBS, Inc., recently launched a new marketing venture which, according to Columbia spokesperson Diane Aronow, combines an "exciting idea, good product and good value."

Last April the first wave of full page ads reached a variety of magazines, including *Woman's Day,* offering a Columbia Home Video System, capable of playing all Atari VCS compatible games. The cost of the unit is either $49.95 or $59.95, depending on whether you got an "odd" issue or an "even" issue. (In a market test, alternating issues carried either price.)

The actual game unit was manufactured by Coleco, which was in development with its own Gemini system when CBS approached them. The CBS system is identical to the Coleco Gemini video game machine, except for the identification label. Gemini, scheduled to be released later this year, will cost $99, and includes a Donkey Kong cartridge. The system's controllers provide both a joystick and a paddle on the same unit.

Columbia's offer requires the purchase of one of four games (Frogger, Empire Strikes Back, Donkey Kong or Gorf) at $19.95, and the purchase of five games at "regular club prices" (currently $24.95 to $29.95, plus shipping) during the next two years. The member then has 10 days to decide if he wants to join. If not, he sends back the unit and game and cancels his membership.

Every six weeks or so, the member will receive an option mailing, with the selection of the month and many other games offered. This is a negative option plan, which means that if the member *doesn't* want the selection of the month, he *must* cancel the order, otherwise it will be sent and the subscriber billed for it.

This type of club has proved successful in marketing merchandise from books to records and tapes, and even fruit-of-the-month. Many years ago, some companies abused the negative response procedure, but nowadays there is very little risk of being taken advantage of.

Columbia House expects to attract a whole new market of potential video game users. There are undoubtedly a large number of people out there who have avoided getting involved in home video games because of the expense involved. Until recently, base price for an Atari unit was around $130. Making a compatible unit available for $49.95, with the promise of buying what averages to one game every 5½ months, may appeal to many people who have resisted temptation so far.

Ms. Aronow indicated that so far response to the testing has been "very successful." (Columbia's first venture into video games offered one game from the above four for only $4.95, with the stipulation that you agree to buy two more games within one year. This is reportedly also doing quite well.) When the required number of cartridges has been purchased, a membership can be continued with a "bonus plan" which offers the first game at club price, with a second game at half price. The half-price cartridge selection can be "any game—not junk."

—Mark Brownstein

Practice Pays

Wouldn't it be nice to take a week off and head for the sandy beaches of Waikiki? Well that's exactly what 24-year-old Harry Lubin is going to do. And for free! Lubin is the lucky winner of Activision's Spider Fighter home video game tournament, held last February at the Bonaventure Hotel in Los Angeles and co-sponsored by local FM station KMGG.

To win, Lubin participated in the three-week, three-night-a-week, contest and beat over 100 other determined opponents. But Lubin came prepared. He reports that he practiced for hours each day before the finals. And in his case practice paid off—he out scored his nearest competitor by over 100,000 points with a score of 176,000.

However, Lubin wasn't the only victor. Activision awarded more than $10,000 in prizes. Second place—a 25-inch Panasonic TV and 10 Activision games—went to Alfonso Del Monte of Downey, Calif. who scored 71,650. Ed Cabrales of Los Angeles captured third place with 48,400 and received a Pioneer AM/FM portable cassette player and five Activision games for his efforts.

—L.M.

Del Monte, Lubin, Cabrales and KMGG's Roger Rose.

Journey: Playing at an Arcade Near You

At last January's Consumer Electronics Show, Bally/Midway announced it had made an unprecedented move by licensing Data Age's home video game Journey for an arcade game. While officials at Chicago-based Bally insist that their Journey game has very little to do with the home version, they do admit that the "first-ever rock video game" is the inspiration.

"We know what level of sophistication is necessary for a successful arcade game, and while the concept is similar (the band has to overcome various hazards in order to get to a concert) aside from that, there's no similarity." reports Jim Jarocki, head of advertising and promotion at Bally. Premiering at the A.O.E. (Amusement Operators Exhibition) in March, the arcade game has been kept under wraps because, according to Jarocki, it features "something that no one's seen before in our business. It's a brand new hardware system that allows us to do more graphically than anyone else has ever been able to do. It's the leading edge of technology, as far as I'm concerned. Sega's laserdisc game (Astron Belt, demonstrated at the A.M.O.A. show last December, but not yet released to the general public) was okay. But it wasn't much different from those games where they have film in the background and you are fighting biplanes on film. What we're doing is totally electronic."

Evidently Journey is Bally/Midway's entry into the laserdisc sweepstakes. They're very enthusiastic about the game and about Journey as well, whom they consider "the most popular band in the age group we're after." The game is due in time for the group's nationwide tour promoting their new album, *Frontiers*, which reached the number three slot on the charts within weeks of its release. The cabinet graphics for the game will be based on the album's cover design, and the game will feature Journey music.

Photo by Linda McCartney

Bally/Midway is no newcomer to the rock world, having produced the pinball games Captain Fantastic, Wizard, the unforgettable Kiss and Rolling Stones. Their last licensed game, Tron, was also very successful. Still, Journey has to pass the first test on its own merit in the arcades and pizza parlors of America. If it is the wild success Bally/Midway thinks it will be, it'll be interesting to see what effect, if any, it has on the home cartridge, and on the Journey group itself.

Meanwhile, Twentieth Century Fox Video Games is making plans for a game cartridge based on Paul McCartney's film *Give My Regards to Broad Street*, scheduled for a Summer'84 release. According to Fox, McCartney will have a hand in designing the game itself and there is talk of an arcade version as well. Also in the planning stages, at another company, is a home game based on Devo. If these recent announcements are any indication of what's to come, we can expect several others in the music business to put down their drumsticks for joysticks and try their hands in video games.

—John Holmstrom

Meet Joe Video Game Player

The average video game player is a well-adjusted, socially active teen who keeps his school grades at a B average or above. He can be termed a "doer," preferring group activities and team sports to solo recreation. His life does not revolve around video games. In fact, chances are he spends no more than half an hour, timewise, and $1, moneywise, per arcade visit.

Such were the findings of a recently concluded nationwide survey commissioned by Atari and conducted by Custom Research, Inc. of Minneapolis, Minn. Two thousand male and female participants, between the ages of 10 and 45, were polled via phone for the survey which reported the following:

- Over 70 percent of all players spend 30 minutes or less, and over half spend $1 or less, per visit to a video game location.
- If a player is a student, he is probably a good one. Math is the favorite school subject of 37 percent of adolescent players; 76 percent have an overall grade average of B or above.
- 44 percent of all video game players usually play with a friend and an additional 17 percent play with a family member.
- The factors most important in a video game are fast action, color and detailed graphics. Other incentives include improving reflexes and competing against others.
- When they're not playing video games, other interests include spare time with friends, working hard and time spent with computers.

Atari reports it will use the survey to help shape future product development for the company's coin video games division.

—Sue Adamo

THE ODYSSEY HOME ARCADE CENTER.

WIN ONE FOR THE TURTLE.

Win one of 50 Odyssey Home Arcade Centers!
All you have to do is go to the Odyssey® Dealer nearest you and fill out the entry form. You can win one of 50 giant, six-foot-tall Odyssey Home Arcade Centers. And each one includes a big 19-inch color TV screen, Odyssey keyboard, twin eight-position joysticks and, of course, a TURTLES™ game.

You could bring real arcade action into your home by just entering the contest. And speaking of arcade action...

Play TURTLES, the hit arcade game on Odyssey. TURTLES is part maze game, part shell game and all action.
The goal is to guide the mother turtle to hidden baby turtlets without getting "bugged" by the beetles chasing her.

For one or more players, TURTLES features eight different challenge levels plus high digital scoring with memory. And exciting sound effects when played with the Voice of Odyssey.®

Win an Odyssey Home Arcade Center and play TURTLES and all of the over 50 other great Odyssey games.

It's a combination that's hard to beat... but easy to win.

ODYSSEY

No purchase necessary. Void where prohibited by law. Entries must be submitted no later than 6/30/83. See your dealer for contest details or send a self-addressed, stamped envelope to: ODYSSEY Home Arcade, P.O. Box 6950, Knoxville, TN 37914. Winners list available after 8/1/83.

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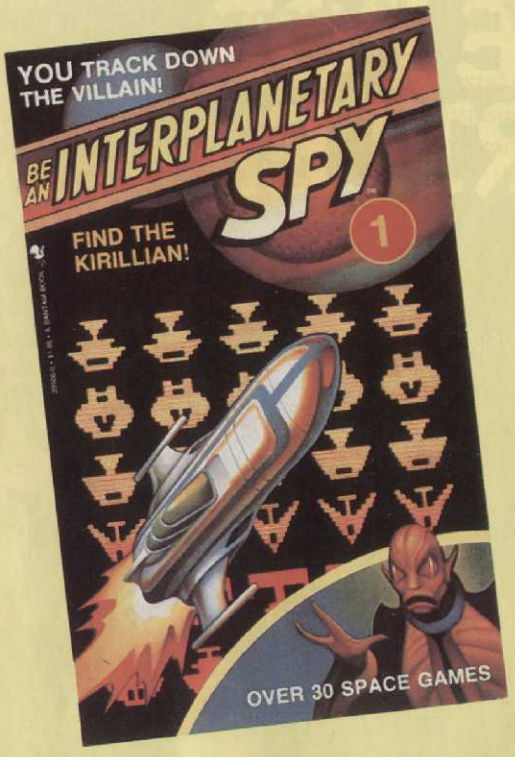
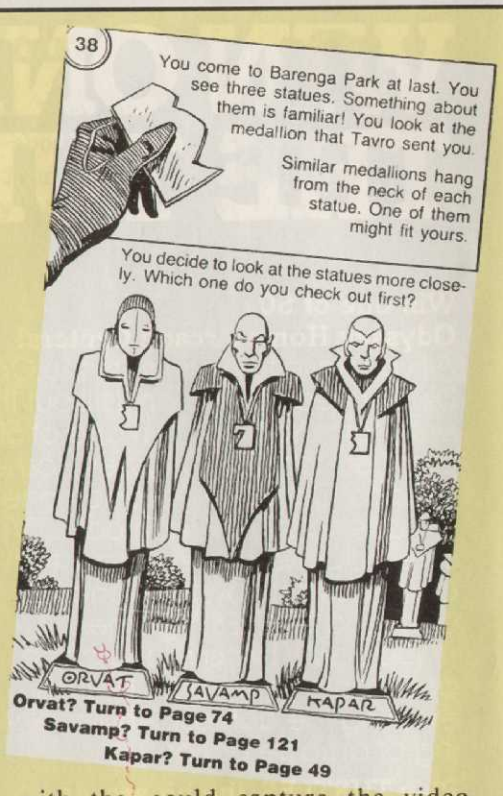
Paperback Video Games

As an employee of the Interplanetary Spy Agency, you've been assigned to track down a ruthless kidnapper and thief called Phatax and return the Royal Jewels of Alvare to their rightful owner. Your first step is to navigate through the spaceport maze and commit to memory Phatax's disguises, the design of his starcruiser and the jewels themselves. Soon you're trying to identify which space sector Phatax is in, the correct order of your launching buttons and landing pattern, and confronting Octopods and Megarons. One wrong move will make you a memory in space.





Find the Kirillian! (Bantam, $1.95) is the first of a series of new paperback books designed "to bridge the gap between the arcade and the library." Written by Seth McEvoy and lushly illustrated, video game-style, by Marc Hempel and Mark Wheatley, the book borrows action and storylines from classic space war games and computer maze games. It allows readers, ages 12 and up, to interact with the storyline by having them successfully complete puzzles, recognize visual patterns and make logical choices to reach mission's end.

"We wanted to see if we could capture the video games' experience in a book," says Byron Preiss, who co-created the series with Bantam, "so we looked to computer games for a different kind of puzzle book.

Pac-Man Holds Fort

This year the Six Flags Over Georgia recreation park in Atlanta has added a Pac-Man Play Fort to its dizzying selection of children's amusement attractions. The fort is a $1 million addition to the 331-acre theme park and focuses on "soft play" recreation. So, no matter how hard the tots romp, they're bound to stay safe.

"There's a bit of child in each of us," says designer Jack Pentes. "I thought about things I liked to do as a kid, got down on my knees to get a child's perspective and designed Play Fort with them in mind." Among the activities are a plastic Pipeline Crawl, soft "Boppity Bag" punching bags, cubicles filled with thousands of colored plastic balls, "Mirror Maze" and "Water Walk." A restaurant shows Pac-Man cartoons and a Pac-Man Magic Show is performed daily by Mr. and Ms. Pac in a theater adjacent to the fort.

Six Flags is open daily through August 28. From Sept. 3 through Nov. 13, it's open on Saturday and Sunday only. For more information call (404) 948-9290.

It's an excellent way to teach kids sequential thinking." According to Preiss, the books make perfect companions for game players stranded in buses, doctors' offices, "all those impractical places to play video games," he says. "I like to call the books 'rockets in your pockets.'"

Releasing in June with *Kirillian!* is *The Galactica Pirate*. These will be followed up in August with *Robot World* (in which the reader is sent on a mission "to defend the last robot from hideous humans") and *Space Olympics*.

Preiss and Bantam kid-tested the books in the arcades before releasing them to the general public and report the response was "uniformly very enthusiastic. Let me put it this way," Preiss says. "Would it be worth it to you to play 36 different arcade games for $1.95?"

—Sue Adamo

Dreams Come True

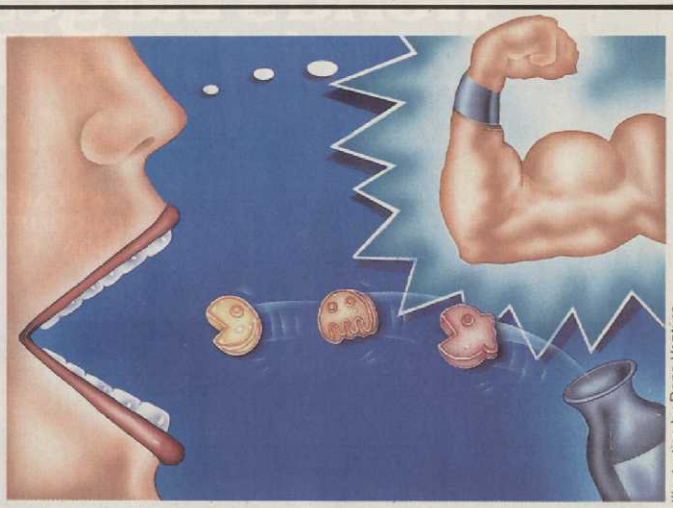


Illustration by Dana Ventura

Pac-Man fantasists who have dreamed of doing to the little yellow fellow what he has done to others will now have their chance—and become healthier doing so. Earlier this year the Rexall Co. delivered Pac-Man vitamins to drug and food chains throughout the country in the hopes that young children will find eating ghost- and Pac-Man-shaped vitamins more palatable than the other chewable tablets on the market.

Positioning its product as "The Better Choice" against the Flintstone vitamins, Rexall is claiming vitamin superiority on two levels. First, Pac-Man vitamins are sugar-free and contain no artificial flavors or colors. Secondly, Pac-Man vitamins are entering the health race double-fisted. They come in two bottled variations, one for the under four set and the other for kids four years and older, as each group has its own U.S. Recommended Daily Allowance (RDA).

The vitamins (bottle of 60 tablets, about $3.50) come in five flavors: orange, grape (purple), raspberry (dark pink), fruit punch (light pink) and lemon (yellow). If lemon is your favorite, stock up now because in six months it will be traded in for cherry flavor.

According to Leon Fleischer, vice president of marketing, "With the Pac-Man game, a person is always trying to improve his score, to play a better game. We wanted to show that striving for improvement in childrens' vitamins."

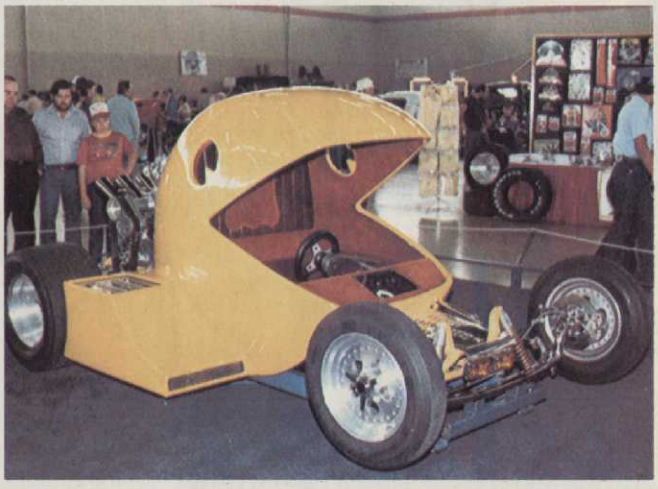
Whether a young tot can see a marked improvement in his game scores by adding the vitamin to his health regimen has yet to be determined.

—Melinda Glass

Pac-Man Goes on the Road

Auto enthusiasts still moan the day the last Packard rolled off the line. But, in a totally different four-wheeled incarnation—the Pac is back. This little "street rod," built and owned by Group Promotions, Pontiac, Mich., won't rip up the road, but it's definitely been a traffic-stopper at auto shows.

Designed by Larry Wood and constructed at Rod Powell's Custom Shop, Salinas, Calif., the Pac-Man car contains parts from a variety of makers, including Buick (V-6 engine), Volkswagen (panels) and Peterbilt truck (fenders). Three months in the making, it debuted last October in Montreal and will make its way around the country for the next two-and-a-half years, at which time it will be disassembled and used for spare parts.



Photos by Alan D. Laska

The interior of the car (which is insured for $100,000) resembles that of other autos, save a unique feature on the dashboard. There one finds a taped game display of the little fellow in action around a maze; a tape deck nearby emits the sounds of the game we all know and love so well.

According to a spokesman at Group Promotions, the most action the car sees is being driven up and down the ramp of the truck that transports it and entry and exit from the halls that host the auto shows. How atypical from the speedy demon it's modeled after! *—S. A.*

World's Largest Selection of Commercial and Home Video Games and Accessories.

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(Not for use with Intellivision™ II or III)

Joystick **14.95/set†**
Precision machined from aluminum (gold anodized) for the most discriminating player. Includes 2 replacement disks with screw-in straight stick and ball handles.

Distick™ **10.00/pair†**
Replacement joysticks for Intellivision™ made from hi-impact plastic.

Intellivision™ Dust Cover **7.95†**
Heavy vinyl with logo.

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1. We've been in business for over 10 years.
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G.A.M.E.S.™ Super Joystick **29.95†**
Finest quality, 5-year mfr's. warranty.

Joystick Extension Cord **(6 ft.) 4.95*** **(12 ft.) 6.95***
6-wire cable.

Joystick "Y" Adapter **6.95***
Allows joystick & paddles to remain connected, saving wear and tear on connector pins.

Joystick Lefty Adapter **5.95***
Allows Atari® joystick to be turned 90° for left handed persons.

Supercharger™ by Starpath™ **39.95†**
Regularly 69.95. With Phaser Patrol™ Tape (increase memory of Atari® VCS).

Emerson™ AC/DC Cassette Recorder **24.95‡**
Regularly 49.95.

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For 2600, 400, 800 & 5200 models. All heavy vinyl with logo.

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Superjoystick™ with 2 Fire Buttons **29.95†**
This is the same quality joystick we've been selling for Atari® 5 year mfr's. warranty.

Ball Handle (EZ Joystick) **10.00/pr.†**
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Joysticks "Y" Adapter **10.00/Ea.†**
Allows use of G.A.M.E.S.™ superjoystick with standard Coleco™ controller.) 9-wire cable.

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(Mon.-Fri. 9-6 PST / Sat. 9-5 PST)

TV Game Show Games

Illustration by Dana Ventura

How many times has this happened to you? You turn on the TV set and switch to one of those afternoon game shows, just in time to witness a contestant up for the big cash price. The emcee's question seems easy enough to you, but, somehow, the contestant blows it. "I could have done better than that," you mumble to yourself as you slump in your seat and watch the credits roll by.

Well, the people behind the Great Game Company, Hollywood, Fla., are ready to put you to the test. At the end of this year, they'll be releasing the first cartridges of a game line based on such popular TV quiz shows as *The Family Feud, The Price is Right, Jeopardy, Password Plus* and *The Joker's Wild*. "There are 50 million people who watch these game shows," says Michael Sisson, vice president advertising/marketing, "so logic says that anyone within that 50 million group who has the (VCS) hardware is certainly going to buy these games. You have to explain to someone how to play 'Asteroid Search,' for example. You don't have to explain to anybody how to play *Family Feud*. There isn't anybody who hasn't watched it at one time or another."

Photo courtesy Goodson-Todman

A cart based on Family Feud *is first on the Great Game Company's roster of game show games.*

The Great Game Company, a division of I.J.A., the children's record company, was the brainchild of president Irv Schwartz who had been looking to carve a unique niche in the video game market. "My first reaction," recalls Sisson, "was 'Gee, Irv, I think it's a marvelous idea, but I don't know that we can get those licenses. After all, Parker is doing one of the shows in a boxed game and Milton Bradley is doing at least three.'" Much to Sisson's surprise the video game rights to the programs were still available and The Great Game Company went into negotiations with the respective television show producers.

Tapped to program the cartridges was conceptual designer Patrick McBride, whose main concern, says Sisson, was getting enough out of the limited 8K memory to do a faithful translation. Sisson reports the results are "superb," with the inclusion of up to 60 game rounds per cart and full use of the music, background and individual trademarks of the particular shows. For instance, Family Feud, one of the first games on the Game Company's roster, begins with an opening screen featuring the show's logo lights and an emcee walking out and planting a big KISS on the TV screen. The next screen offers a topic, say "Dangerous Fish," and the first player or team to hit the fire button of the joystick gets control of the board. Seven answers are displayed on the screen, with only the first letter of each revealed. The object is to find the three most popular answers on the board by moving a cursor, via joystick, to your guess within three seconds.

The producers of *Family Feud*, Goodson-Todman Productions, had approval all the way through the games' design—from initial concepts, to storyboard, through programming, and they supplied questions and responses from actual shows.

Despite the fierce competition among software makers, Sisson feels his company has "an excellent chance" with their products and to help that along they've designed distinctive packaging. "Everyone is ditzying up their packages with all kinds of little pictures and colors," Sisson notes. "I'd like to stand out on the shelf, so we designed a simple package with all the emphasis on the game title. What I'm trying to do is build a family identity for the series and I'm doing that by using the show's logo, in gold, on a solid black background."

The company is looking to move into software for other game systems and home computers as well and, to be sure, they're keeping their eyes on the TV listings to see what other game shows might crop up. ▲ —*Sue Adamo*

Arnold C. Greenberg

A ColecoVision of the Future

By Roy Trakin

"We can make the experience the equivalent of life itself. You will be the star of a 35 millimeter movie, you will be at the center. All of this is merely a warm-up for what's ahead in the next few years."

It's a gray Saturday afternoon at the Hartford, Conn., headquarters of Coleco. The company's 49-year-old president, Arnold C. Greenberg, sits behind a desk amidst towering piles of memos, invoices and bills. Impeccably groomed, with gray-flecked hair, bushy eyebrows and an intense, straightforward manner, he is surrounded by the recreational products that have moved Coleco to the upper crust of the video game field. Last year, the company started by his father, Maurice, 50 years ago, tripled its sales from $178 million in 1981 to a whopping $510 million, with net income shooting up 420 percent to $40 million.

The history of Coleco reads like a fabled American success story. From its humble beginnings, selling leather goods to shoemakers, Coleco began manufacturing its own products, including leathercraft kits for Mickey Mouse and Davy Crockett moccasins, and Howdy Doody Bee-Nees in the early '50s. The company's interest in licensing has endured to this day with toys built around such marketable commodities as Smurfs (playhouses), E.T. (pools and power cycles), Sesame Street (Rumble Seat Roadster) and G.I. Joe (Arctic Patrol Bobsleds).

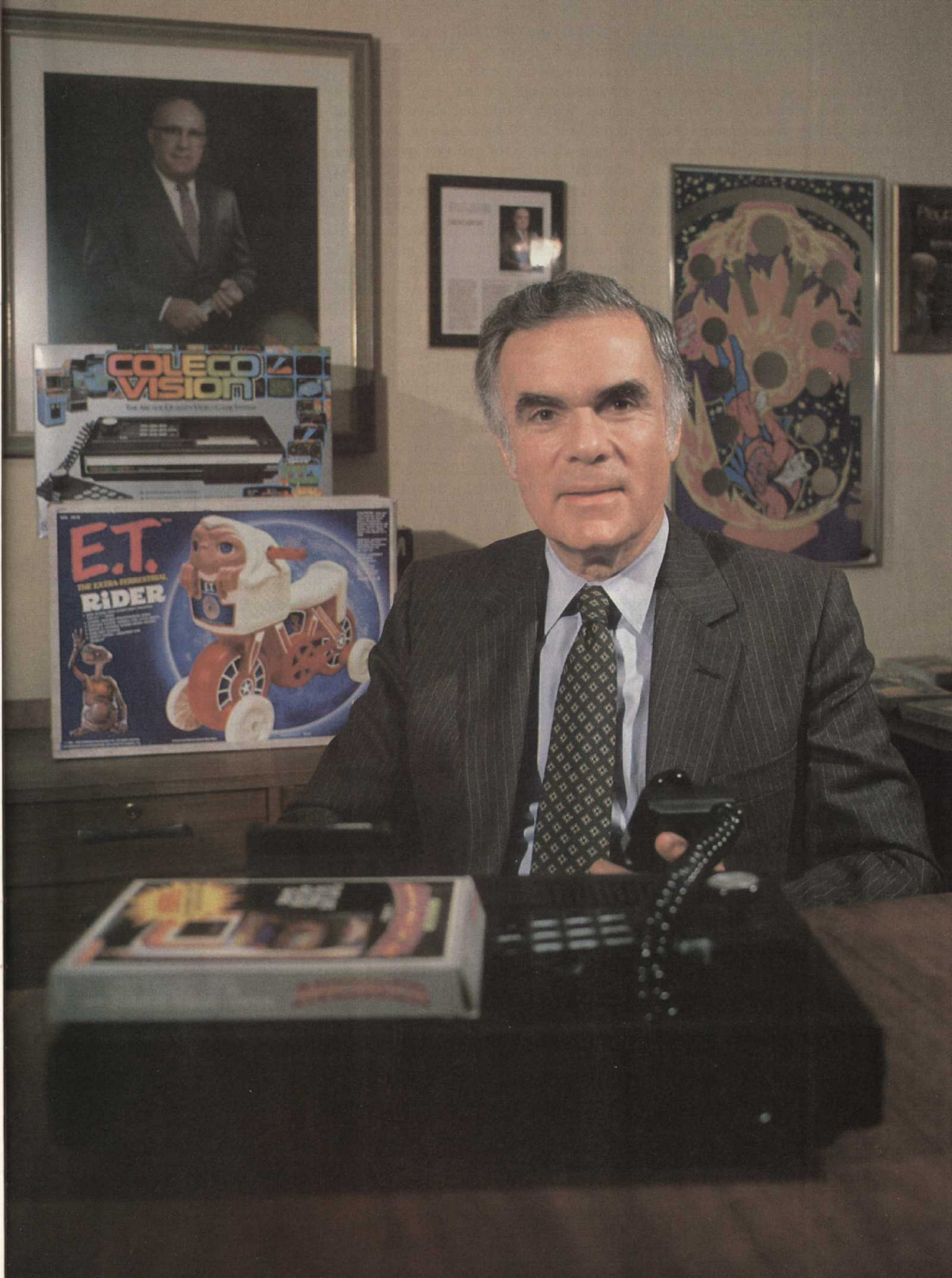
From leather, the company expanded into plastics in the 60's, building a reputation as the leading manufacturer of above-ground swimming pools. In 1966, Greenberg, who had been practicing law and representing the family company, moved over to Coleco on a full-time basis. As son, brother, director, major stockholder and legal representative to the company, who had been involved in the growth it experienced, he says it was an easy choice to make. Two years after his arrival, the company acquired Eagle Toys, a manufacturer of a tabletop rod-hockey effort, heralding Coleco's entry into the sports game arena. Soon Greenberg and his brother, Leonard, chairman of the company, began prowling the arcades, searching for the next big thing. They found it in a game called Pong.

Pong sparked the brothers into thinking of bringing such fare into the home. In 1976, one year after Atari offered its own home version of Pong, Coleco introduced Telstar, a "dedicated" video unit and, in the following two years, offered upgraded versions and a programmable unit. The interest in the dedicated systems was being overshadowed by the popularity of hand-held electronic games, pushing the company into this new area. While Coleco managed to sell in excess of $20 million in hand-held games, it was forced to dump more than a million units of Telstar, driving the company close to bankruptcy in 1978, when financial reports revealed a loss of over $20 million dollars.

Ironically, this flirtation with disaster made the company more determined than ever to remain in touch with the ever-changing world of toys. ColecoVision, the video game player introduced last August, sold over a half million units in 1982, at $175 apiece. And, even though this made the unit $75 more expensive than Atari's VCS, video aficionados praised its lifelike graphics, which were superior even to Intellivision, and $35 lower in price. Greenberg predicts that Coleco will soon surpass Mattel to become the No. 2 seller of video game players, right behind Atari.

The future looks bright indeed for the recreation and toy company. Coleco has gone into agreements to bring out 20 new games by the end of '83, including popular titles like Donkey Kong, Jr., Space Fury, Rocky Battles the Champ and Gorf. In January, Coleco made CBS its principal foreign distributor, and will begin developing and marketing for ColecoVision, home video cartridges licensed by CBS from Bally. A lawsuit with Atari has just been settled, allowing Coleco to continue to produce the expansion module which makes it possible to play Atari 2600 cartridges on the ColecoVision system, while Coleco continues manufacturing of cartridges for the Atari and Intellivision systems. The company recently introduced a wafer system known as the Supergame Module, which has more memory capacity than any video game software on the market, more than eight times that of any Atari 2600 compatible cartridge. At the June Consumer Electronics Show Coleco will enter the home

Photos By Lionel Martinez


COLECO VISION
E.T.
THE EXTRA-TERRESTRIAL
RIDER

computer business with the introduction of a Coleco Vision computer (total cost: $375—$175 for the video game player, and $200 for the module). The computer module will come with a printer and contain a microdrive, a new storage device superior to the cassette storage units used in other lower-priced computers.

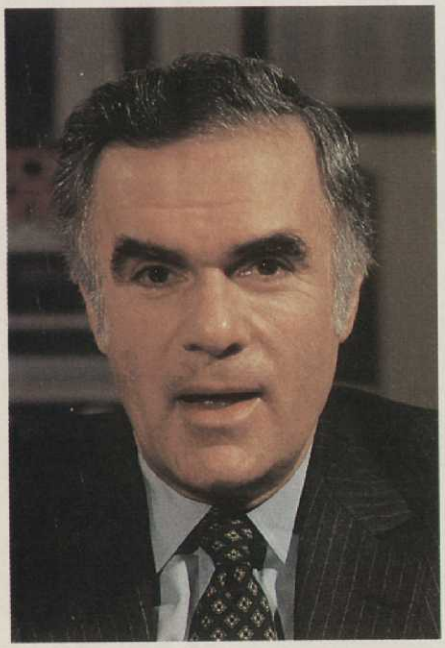
So, while experts argue whether the public will buy a home computer from a company known primarily as a toy manufacturer, Coleco gears up for a future where video games can "replicate life itself" and in which the player becomes "the star of his own 35 millimeter movie." As Arnold Greenberg systematically describes his company's prospects, I glance over his shoulder and see a row of posters hanging on the wall, a chronology of the company—from leather moccasin kits to above-ground swimming pools to tricycles and ride-on choppers to video games and computers and beyond. Only in America could the son of a leather goods man grow up to be head of a manufacturer of home computers. A portrait of founder Maurice Greenberg hangs in the boardroom at Coleco. It might have been my imagination, but I could swear he was beaming with pride as his son described his company's vision of the future.

VIDEO GAMES: How do you feel about Wall Street's prediction that video games have peaked, in the wake of Atari's fourth quarter slump?

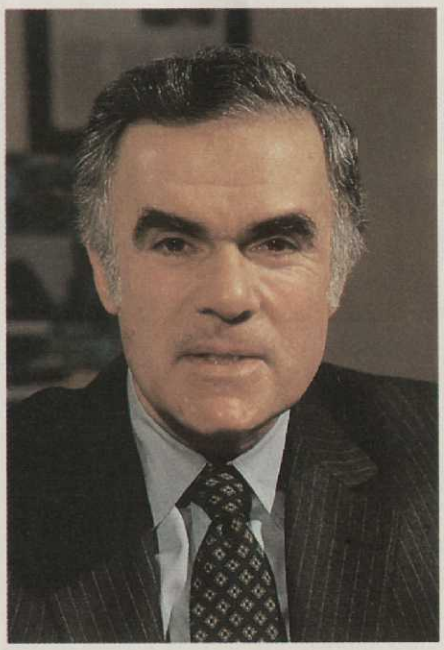
ARNOLD GREENBERG: I think Wall Street clearly overreacted, and very erroneously downgraded the prospects for continued growth of the video game market. Warner Communications had a record year in 1982 and, clearly, Wall Street made an error and very quickly corrected that error and now realizes that the industry is healthy. Some companies may be healthier than others. What really happened last year was that, as newer competitors came in, market shares were being reallocated and the fortunes of some companies were advancing at the expense of other companies. I'm very positive about the industry and, more importantly, the great opportunity that the industry has to keep growing. Now, by industry, I mean both the video game industry and the home computer industry, which I define to be under $500 at retail. Increasingly, those two industries should be treated as one. There is too much focus on video games versus home computers, as if they are competing industries. In fact, they are not. There is much too much focus on the hardware means of delivery that, truly, I think is a false distinction. The real issue is to take a look at the software opportunity that both hardware systems seek. What we're really saying is that the industry is one involving computerized entertainment. Whether you buy a video game system or a home computer, generally, substantially all the software that you're using is entertainment in nature. A more powerful machine, which we tend to call a home computer, lends itself to more sophisticated entertainment software. But, still, the majority of the software packages bought by home computer owners is entertainment software.

VG: So you see the home computer/video game as a luxury item rather than a necessity?

AG: It's hard to say that a video game is a luxury. That may literally be so, but I don't think that that is a difference that takes us anywhere. Some 15 million American families have already bought a video game system. Therefore, it is getting to be as much a necessity of life as a luxury. What I'm saying is, the name of the game is computerized entertainment, whether or not that entertainment is made possible by a video game system or a home computer system. We should not look at the two kinds of machines as antithetical and opposite. Increasingly, video game systems of the future will be more complex. They will, in fact, be home computers, and the kind of entertainment software that they will make available will be increasingly sophisticated. The direction we are going towards is more interactivity, more sensory appeal. There will always be a large market for the very low-priced video game system, and that will be for the consumer who wants an entry-level experience at a low price. But the more sophisticated video game systems, which



"...Games are a foot in the door, but entertainment is more than merely games..."



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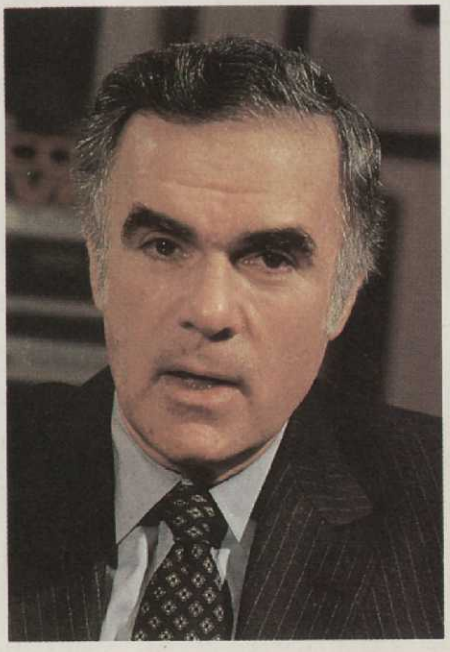

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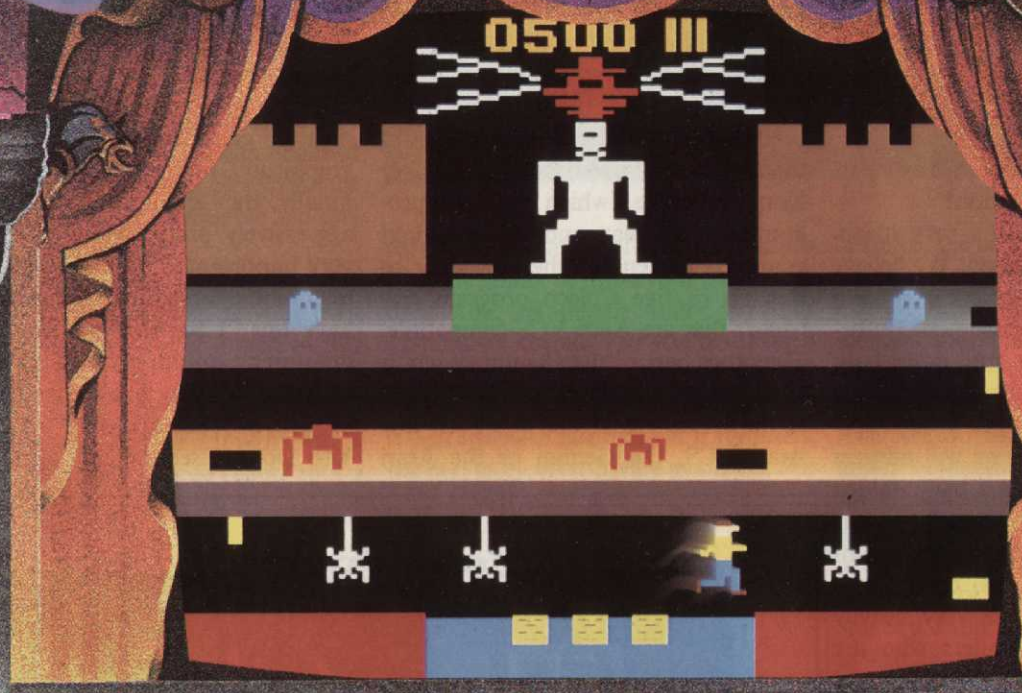

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are in fact home computers, I think will increasingly take a larger share of the total market.

Games are a foot in the door, but entertainment is more than merely games. It's a step up in sophistication from games. After the kids first bring these systems into the house to play games, the adults eventually learn how they can use them or, as the children get older, they find uses for the home computer in addition to entertainment. That's what the ColecoVision home computer system is all about: finding utilitarian opportunities for the entire family to put to work. The opportunities are very real, and that is the key to making the home computer appealing to the entire family.

VG: What is your own company's particular role in that evolution?

AG: We think we have a very meaningful role in the evolution. We believe that there are three primary uses for a home computer: entertainment, information management and education. And I rank them in that order. By virtue of who we are and our particular background, we think that we will address those three functions in a truly unique way and we will go very heavily on our experiences as a successful entertainment company and as one whose distribution network tilts very heavily toward those large retailers who are comfortable handling entertainment and promotional merchandise. In many cases, those are the retailers specializing exclusively in toy and entertainment products. These are the people who want products that are simple, integrated and functional, but don't require a great deal of demonstration. The mass consumer market is the one we take as our objective. We do not seek to turn the mass of Americans into programmers. We are not looking for a hobbyist market. We are seeking a very broad-based market.

VG: I understand that just this week the lawsuit between Coleco and Atari regarding the Coleco Expansion Module #1 has been settled. Could you tell us about the issue that was involved here?

AG: The lawsuit raised the question as to whether or not there was any patent infringement by Coleco in connection with the Expansion Module #1 which we made for the ColecoVision system. That module made it possible to play any Atari 2600 VCS compatible game on our system. It also raised the very same patent question with regards to our new Gemini video game system. Again, it is a free-standing system that makes it possible to play the Atari cartridges. As a result of the settlement, Coleco will continue to be able to make and ship both the Expansion Module #1 and the Gemini free-standing system and that will be done under a royalty-paid license under the Atari patents.

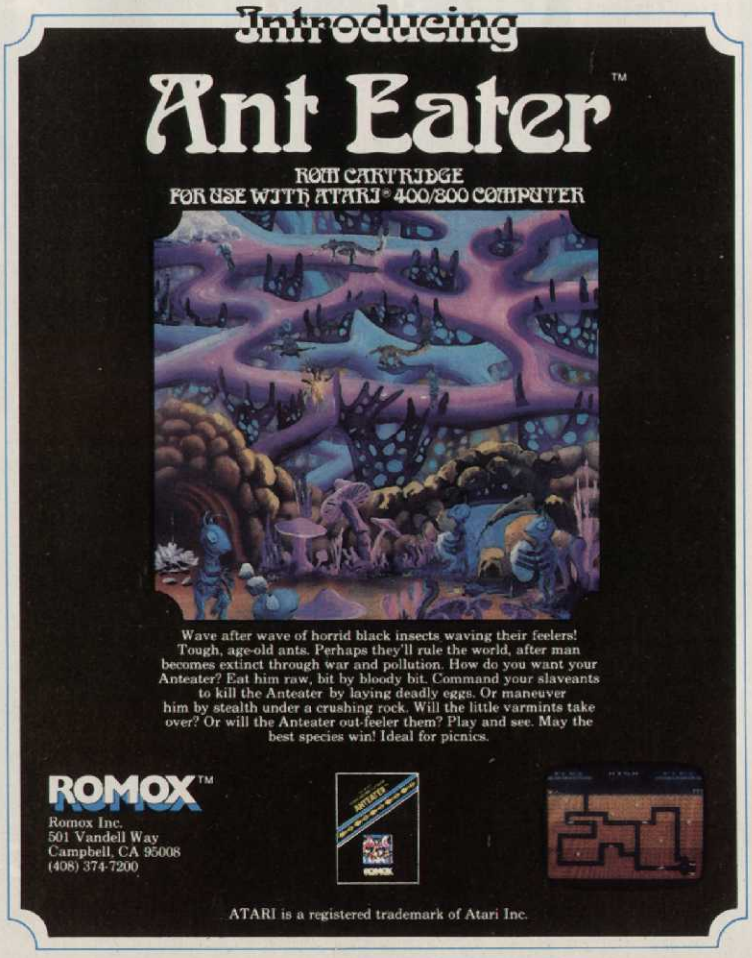
VG: Tell us about the Gemini. Is it a children's system?

AG: No, the Gemini is not just for children. It's a free-standing system that functionally can do what the Atari 2600 VCS can do—it plays compatible cartridges. We have a very fine controller that's included with the game; one that's both a joystick and paddle controller at the same time. We also include a Donkey Kong cartridge, which we had programmed last year, and $25 in savings coupons that enable the consumer to buy up to five Coleco program cartridges that are Atari VCS-compatible. The other part of the Gemini system is what we call Gemini Sound I. This is a sound module that can work on any Atari VCS, the Gemini or the Atari module that plugs into the ColecoVision system. It's a patented, digitally encoded sound system that coordinates the action on the screen with sounds. We are making use of licenses, such as the Berenstain Bears, Dr. Seuss, the Smurfs, to capture what should be a very appealing youth market.

VG: In a market atmosphere that has become so crowded with software game cartridges, what is the key to breaking hits?

AG: I think the titles that are likely to be the most profitable and the most successful are those based upon very strong licenses. But that's only step one. Step two requires that the home video versions be very well programmed. They must be good translations, not merely graphically, but in terms of game play. Finally, they should be effectively and aggressively promoted on TV. That's very important. Those companies able to combine these three elements should have hits. I see the software market developing multiple tiers, with cartridges of varying quality available for $5, $10, $15, $20 and up.

VG: Do you see the coin-op business,

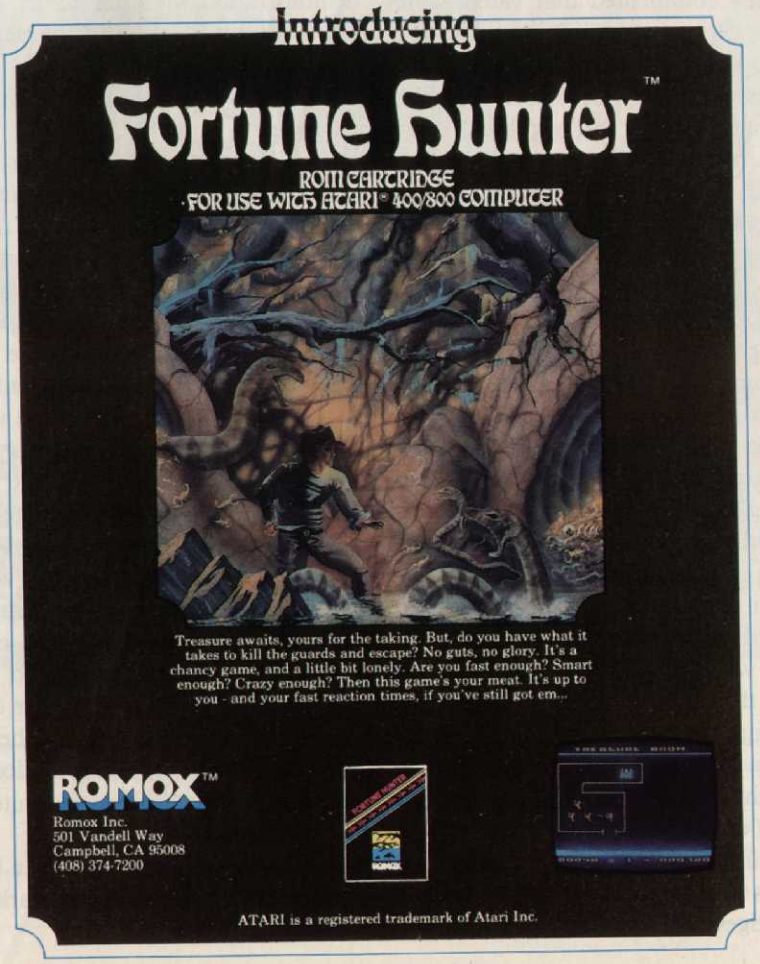


even as it wanes, continuing to be an important source of licensed titles?

AG: Absolutely. The coin-op business is not as strong as it once was for various reasons. There's been a proliferation of newer machines, but they've been unable to gain a foothold because the hits of yesteryear are such hearty perennials. Another reason for its weakness is that there are now many coin-op hits available in home versions. But, as a whole, I think that industry is healthy, and all that it awaits are technological developments that will create new, exciting forms of games. Some of those developments will take place this year, things in the nature of 3-D and the videodisc, which will make coin-op play more exciting. Videodiscs can enhance graphics and make the whole experience more sensory, more interactive and certainly more appealing.

VG: Talking about making the experience more appealing, is your own Super Action Controller a step in this direction?

AG: The Super Action Controller is a system designed for use primarily with a line of advanced ColecoVision sports software. It's a pistol-grip and comes with the ability to move four players individually, 360-degree rotary joystick, 12-position keypad—so you really have a very interactive, sensory controller system. The software that's designed for it will be quite unusual—it'll represent the best in sports software available. For instance, the baseball game will be split-screen, so that you will be able to see many images and different aspects of the baseball game at different times. The Super Action Controller really will lend itself to a very new software experience. And that's really what we're talking about in terms of future development: an experience that can take the player and bring him closer to the center of the action. We can make the experience the equivalent of life itself. You will be the star of a 35 millimeter movie, you will be at the center. All of this is merely a warm-up for what's ahead in the next few years.



VG: Although you believe strongly in licensing, Coleco is still very much committed to creating original games.

AG: Oh, yes, original games are very important, and even the programming of licensed games is important. The translation from the licensed version to the home version takes a great deal of skill and programming capability. We have been doing that in-house since last year.

VG: Why haven't you publicized the individual programmers of the games, as Activision and others do and, in the same vein, hired a visible company spokesperson, a la George Plimpton and Bill Cosby, for your TV advertising campaigns?

AG: We don't believe that a cartridge is created by any one person. We have a team of many people, including graphics designers, who are very key to the development of any cartridge. We think it's inappropriate to lay the primary

credit at the feet of any one individual.

It's been a deliberate move on our part to avoid working with a spokesman. Our thinking on that has been severalfold: Number one, our product is so superior to the competition in the marketplace, that in and of itself, our product is the very best spokesman. Secondly, and this stems from the first reason, is that it's pointless for us to compare ourselves with the competition. We think we're dramatically better. What our commercials do is compare our product with the arcade experience and that really seems to be a much better way to go.

VG: Will the market for hand-held games continue to be profitable?

AG: Oh, there's no question that will be a continuing market, even with video game prices getting lower and lower.

VG: When you first entered the video game market seven years ago, how did you think the business would develop?

AG: We knew back then that the field would develop along cartridge-based lines. The only question was how quickly it would take. Actually, it took quite a bit longer for the video of the present day to develop because the portable market got so strong in the late '70s. The advantages of portability are obvious, so, when the low-cost microprocessor became abundantly available, it was possible to create a new game experience that, for a while at least, clearly overshadowed video.

VG: You entered the video game hardware market rather late. What was your strategy in introducing ColecoVision?

AG: We became convinced that the market needed a third-generation system, a system with even better graphics than the Mattel system, and with exciting software. And we felt that, with the advent of the home computer, it would be desirable to create a system that was expandable—that was modular in nature, so that state-of-the art developments could be incorporated into it as they came along. We saw the need to create a much better mousetrap. We felt that the available technology was such that a better product could be created, in terms of graphic capability, in terms of the controller system, and, in particular, in terms of expandability.

VG: And now you are introducing an attachment that can turn ColecoVision from a video game system into a home computer, which can compete with the Texas Instrument 99/4A, Atari 400 or Commodore VIC.

AG: We will be at the June Consumer Electronics Show previewing a very unusual keyboard module, complete with certain peripherals that will help us address in a unique way the primary uses of the home computer as we see it—entertainment, information management and education.

VG: Are you convinced that the most important function of the home computer will be entertainment, or is that only from Coleco's perspective?

AG: It seems to me that's not even a debatable issue. All one has to do is take a look and see what kind of software is being purchased by people who own home computers. Anywhere from two-thirds to three-fourths of the units are entertainment software. I believe that will continue. The home computer is merely a more sophisticated entertainment machine than the video game.

VG: Do you feel that video games can be an important learning tool for youngsters?

AG: I'm delighted to see that even the President of the United States just recently commented that video games can be very constructive, indeed, even in the training of pilots. I think video games have done a lot to lower the age of computer literacy and help break down the barrier between consumer and computer. Video games are, in and of themselves, home computers, and the value of the video game experience, is, at least in part, that the user quickly develops the hand-eye coordination that is of great value in the manipulation of the computer. Video games can teach the player memory and strategy. One increases one's score if one develops certain memory capability with respect to noting what is a repetitive game pattern and what isn't. The more one concentrates on the challenge of game play, the higher one's score can be. So, there are valid learning experiences that come from working with video games, and I think they are a very natural transitional step into the home computer. To argue otherwise at this late date, is really rather foolish. I see no danger in reducing the age of computer literacy. I see no danger at all in furthering understanding.

VG: Is Coleco active in distributing game cartridges to outlets like video stores?

AG: I think our products will increasingly be sold by stores that also sell video cassettes. The development of the software boutique is a new concept in merchandising that will certainly be prominent in the '80s.

VG: How can a company like Coleco go up against the mass communications giants like Warner Brothers or CBS in competing for shelf space in stores like that?

AG: The key to competing is having the right product, whether you're large or small. And our product is right. We compete with anyone and everyone in every means of distribution.

VG: Does Coleco plan to move in the direction of establishing their own retail computer outlets, such as Apple and IBM have done?

AG: No. That is a very different, and specialized market. It's the personal computer field, which is a specialized text market and a complicated one, for different people who require a great deal of demonstration. That's not what our system is about. We're talking about a mass consumer product here that must be simple. It's got to be able to hang on a hook. It does not need extensive in-store demonstration in order to let people know what it is. It's got to be clear and apparent on its face.

VG: How would you describe the Coleco image?

AG: We're a worldwide leader in the manufacture of entertainment and recreational products for the entire family. Right now, most of that is electronic—in 1982, 73 percent of our volume was electronic. But, we do have an important and growing position in the non-electronic toy and entertainment product area, and that's a position we expect to continue to expand.

VG: Can Coleco catch up to the front-runners even with its relatively late start?

AG: Behind the front-runners? Well, I suppose technically we are, but we feel that the momentum is certainly running with us. We believe we are clearly established as the most wanted video game system, even though some of the others have sold more units in the past. That really is the key consideration.

VG: And to what do you attribute that momentum?

AG: A combination of quality, a better product, and very agressive marketing and merchandising. ▲

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GEORGE OPPERMAN

The Fine Art of Video Games

By Mark Hazard Osmun

A painted woman rises in the midst of a fantasy landscape. She is naked. Her body is entirely green except for her face. There the green breaks into patterns exposing flesh tones reminiscent of a loosely woven mask. She looks almost serpentine rising amid huge, illuminated, red mushrooms and prismatic flashes of light.

"It was unusual to say the least," says George Opperman, "to be working with a girl in green greasepaint. And those models don't work cheap either," he laughs.

Opperman, 48, is the Director of Visual Communications for Atari's Coin-Operated Games Division. It is his responsibility, along with a 12-person staff, to create and produce all artwork for Atari's arcade games, be it advertisements, posters, promotions or game cabinets.

Opperman turns again to the lovely young woman featured on the poster on the wall before him. "We were trying to create a Centipede poster for our distributors and this is what we came up with. It's good, but its definitely not what we would put out for the general public." While the art is eye-catching and beautifully rendered, it is also sexy. Atari's Marketing and Corporate Public Relations divisions and Opperman himself must think about more than art when it comes to the public. They must consider art's relation to *business*.

Traditionally, the temperaments of

Opperman (left) and Robert Flemate, Visual Communications Supervisor, at work.

"...They must be able to translate that blip into something —a character, a monster, a design, an abstract symbol. They must be talented..."

the artist and the businessman have been thought to be opposed—bohemian, irresponsible, creative types on one hand; uptight, but dependable, conservatives on the other. In Opperman one finds the opposites reconciled in a characteristically sensible way.

Opperman came to Atari via the Ontario (Canada) College of Art, Drake University (where he majored in graphic design and marketing), *Commercial Arts Magazine* and various advertising agencies and design offices. In 1972, Nolan Bushnell's fledgling company, Atari, was one of Opperman's clients. By 1976, he was invited to join the company's staff, making him now one of the longest-surviving Atari employees, and from there built the graphic design department from a one-man operation to its present complement.

Seated at his desk, Opperman is surrounded by the tools of an artist's trade—a drafting table to his right, 144 shades of color marker pens behind him, sketches laid out before him.

He is dressed appropriately for the board meeting he has just returned from: a neatly tailored suit, button-down collar, pinstripe shirt and conservative tie. Beneath such wrappings, however, lurk spacey, comic-book visions of turquoise asteroids and laser explosions.

"It's a Jekyll and Hyde thing," Opperman says. "This *is* a business. And because it is a business and our schedules

are so tight, we have to be disciplined. Contrary to what many may believe, this is not a laid-back line of work and the temperamental artist can't last long here.

"On the other hand there are no limits placed on our designers and illustrators—other than time and money. We want them to take things further ahead all the time.

"We want good illustrators with good design sense and good color sense. They must be able to do finished art as well as be able to visualize how to interpret game play from what they see on the video screen. They must be able to translate that blip into something—a character, a monster, a design, an abstract symbol. They must be talented."

Opperman pauses and shakes his head. "You know for years you hear people say, 'God, if I could just have freedom, I could really *do* something. I could do *great things*!' Well I say, 'Now you have. Let's see if you're up to it!' "

The first step in producing artwork for an arcade game, says Opperman, is to play the game. When a designer plays, say, Centipede, he looks for aspects of the game that suggest exciting display art. The writhing motions of the Centipede, for example, was the take-off point resulting in the poster image of the green serpentine woman among the mushrooms.

But before the design team (one supervisor, designer and illustrator collaborate on each game) puts pencil to paper, the Industrial Design division must provide the specs (size, shape, etc.) of the cabinet that will house the game. The type of cabinet—coffee table, upright, or enclosed/sitdown (à la Red Baron)—determines much of the overall design. That accomplished, the designer begins work on rough "idea sketches."

"When it is time to draw," says Opperman, "I get a sort of tunnel vision, an approach of concentration during which all else fades away. When I'm done, I can then turn back to the business aspects of this work."

A foam core, wood and paper ¼-scale model of the cabinet complete with artwork is then constructed. This model helps the artists see how their work is progressing and provides the

marketing division with a mock-up to evaluate, approve or reject. When a design is approved, the illustrators and designers move to finished art. Each color is cut individually for silkscreening.

The final processes are conducted nearby at Atari's 45,000 square-foot silkscreening plant. Workers at the heavily automated facility stencil each game's side panels using a six-by-eight-foot press, while others are kept busy inking glass or vinyl "attraction" panels. As many as six different colors are screened onto each side panel—each color going through the press individually.

The end result, it is hoped, is an arcade game that will catch the eye and attract one to it like a flower does a bee.

"What we sell," says Visual Communications Supervisor, Bob Flemate, "is what happens in our minds and comes out through our hands."

Of course it is not always that forthright or poetic; there are moments when business intrudes unwelcomed into the realm of art.

"The frustrating thing," Opperman admits, "is when we don't have enough time to do a reasonable job. For example, when there is a big show coming up, on top of everything else, the constraints of time (and money) limit us."

Sometimes, though, it is not time but taste that stands in the way of artistic expression. Tempest, a game of rather nebulous geometric shapes, had been a problem for Opperman's staff, who had been trying to develop characters based on those shapes. Finally, they came up with monster-characters.

"Marketing liked it fine," Opperman recalls. "But then our team leader, a programmer, came in and said the monsters were too scary and would drive off players and hurt the corporate image. So we had to change it."

Still, the satisfactions outweigh the frustrations. Opperman points to the art on Asteroids Deluxe, which he directed, Finnish abstract painter Marty Viljamaa designed and Flemate illustrated, as one of his favorite works. "On Asteroids Deluxe we got to try some different things, like using a four-color process rather than fill-in line art," Opperman says. Among the 70 to 80 games he and his staff have illustrated, Centipede and Space Duel are also among his favorites.

Opperman may have his favorite game designs, but the design for which he is probably most noted is the now infamous Atari logo. There have been conflicting reports about the meaning behind the design of this. Different theories (some, or all of them, planted by Opperman himself) keep springing up:

- It's a Japanese letter-character.
- It's a three-line representation of Atari's three divisions (at the time of the symbol's creation Atari had only one division).
- It's from the Japanese game Go.
- It represents Mt. Fuji.
- None of the above.

Cornered, Opperman offers this story: "In 1972, George Ferraco of Atari asked me to work on something for their corporate I.D. Well, symbols are just visual nicknames that combine first letters and interpretive design elements .... In six months I went through 150 designs.

"Anyway, I kept trying to stylize the 'A,' then I looked at Pong—their big game at the time. Pong had a center line and a force (the ball) that kept hitting its center from either side. I thought that (force) would bend the center outward. And that's what I designed."

Sounds perfectly reasonable. One wants to believe it. A businessman, after all, probably would not spend time dreaming up another playful hoax.

An artist, on the other hand, just might. ▲

Among the 70 to 80 games the Atari coin-op art staff has worked on, Opperman counts the intergalactic war scenes in Space Duel as among his favorites.

ATARI 2600 COMPUTER
ATARI 2600
ODYSSEY
INTELLIVISION
COLECO VISION
MANDO 83

ALL KEYED UP

With the ever-advancing developments of state-of-the-art technology, and society's fascination, as well as infatuation, when viewing the potential applications of personal computers for day-to-day life, it should come as no surprise that the newest trend is directed at expanding the capabilities of that at-home entertainment phenomenon: the video game system.

Where once the two were worlds apart, the past couple of years have shown just how closely interrelated they are—and can be—to the point that home computers owe their considerable impact, first and foremost, to the emphasis on bringing arcade-style action to life.

Meanwhile, video game systems have undergone a rapid and dramatic evolution since their initial introduction little more than a decade ago. Today we stand at the crossroads where the once thought simplistic and limited system has been upgraded and updated as video games enter into the computer age.

To help you survive the journey and better understand what it all means for the future, *VIDEO GAMES* offers a close look at the leading models and add-ons that are keying the way for tomorrow's video game systems.

MATTEL INTELLIVISION II

One Step Beyond

Mattel's step-up move from video game machine to computer system has been a long time in coming. From the beginning many consumers were bowled over by the realistic graphics of the company's Intellivision, but didn't like the price. The alternative was Atari's 2600 which was cheaper and offered more games. Slowly, like the age-old feud between Chevy and Ford owners, consumers started to take sides between Intellivision and the Atari VCS. Then they sat on their couches behind their prospective game machines and waited for their company's next brilliant (they hoped) move.

Atari didn't make a move, but Mattel did. Banking on its "superior" reputation, Mattel figured its fans were ready for a more sophisticated product and began test-marketing a computer add-on that, at the time, was planned to cost $700 to $800. It proved to be a price point which doomed the unit and also led to Mattel's use of rebate offers designed to help Intellivision earn some price equality.

Now, Mattel fans are smiling as their company, finally in sync with the market, has introduced an updated and less-expensive Intellivision II along with an array of affordable peripherals which turn it into a computer system for beginners, as well as a music synthesizer. The entire package has been dubbed the "Entertainment Computer System" (ECS), and is being positioned right between video games that compute and computers that play games.

The Intellivision II essentially is the Intellivision I only with some design changes such as its sleek, white housing, reduced in size with peripherals to match. Appearances aside, the unit includes detachable hand controllers with longer cables, an on/off switch and a price that will be anywhere from $130 to $200. All existing Intellivision games and peripherals will still fit the new model with an updated Intellivoice in the matching white retailing for about $80.

Since the Intellivision II's controllers are detachable, Mattel now offers new controllers which plug into the unit and can be used with all Intellivision games. The joysticks measure 3 ½" high and have top-mounted fire buttons and four side-action buttons located on their bases. They'll probably retail for under $20 per pair.

Simply speaking, the ECS expands the Intellivision systems into areas of education, music and family-oriented computing. It does so via the computer adaptor, which connects directly into the model I or II, and provides 2K of additional RAM memory, enhanced manipulation of graphics, and 12K ROM with Intellivision's own built-in BASIC computer language.

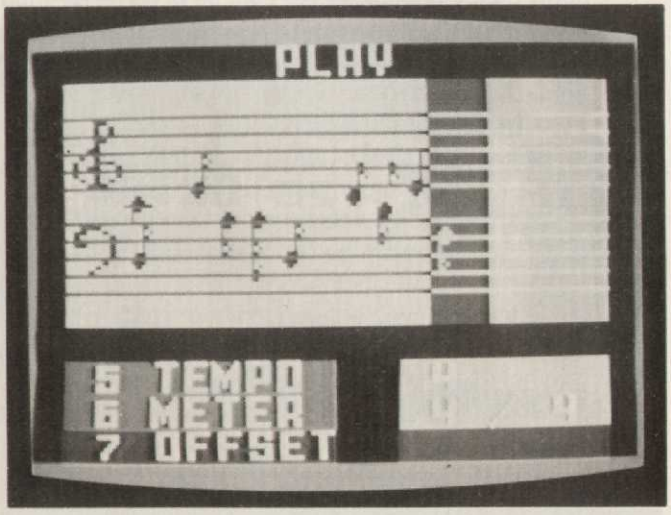
Of course, the adaptor does nothing without its com-

panion 49-digit, full-travel keyboard (it looks just like a typewriter). When you plug the two in, your Intellivision becomes a computer that can be easily programmed to perform a variety of functions. The keyboard also adds a new dimension to video games because it supplements the hand controllers by allowing the user to change any aspect of the game such as graphics, skill level and game action. Keyboard and adaptor will be priced at about $125 to $150.

Mattel's three new "Super" games designed just for the ECS—World Series Baseball ($35), Mind Strike ($35) and Scooby Doo's Maze Chase ($26; names subject to change)—are good examples of how the player can use the additional memory and keyboard to heighten the fun. In the baseball game (created by a designer and full-time statistician), you can program Hall of Famers to play against each other or program batting and pitching statistics for your team. In the Scooby Doo maze game, if you tire of the 15 preprogrammed mazes, you can use the computer keyboard to create your own.

New kids games for the ECS are Ways With Words, Number Jumble and Flintstones Keyboard Fun, each to sell for around $26. Designed to help children improve spelling, grammar, sentence structure and mathematical skills, the games at the same time will develop any beginner's keyboard dexterity. And for the child or adult beginner who wants to learn more about BASIC programming, Mattel will introduce two programming cartridges with the ECS. Tentatively called Mr. BASIC Meets "Bits 'N' Bytes" and Game Maker, the software combines simple programming and video games.

In Mr. BASIC ($26), a split screen shows the user program commands at the top and video game action at the bottom. Programs use color-coded graphics to make learning easier. Game Maker ($26) allows you to create your own video game without doing all the work. The game's graphics and play are already designed for you. Your job is to choose the characters and action you want (you can even plug in any Intellivision game cart you might have and select characters from it) and then finish the program.



Melody Maker is one piece of software in the ECS music line.

Despite these capabilities, don't confuse the ECS with Mattel's *other* new introduction, the Aquarius Home Computer System. That machine, Mattel says, is for more serious computer users hoping to do more powerful applications.

Mattel's director of marketing for Intellivision new products and peripherals, Gary Moscovitz, stresses that Intellivision and the ECS peripherals are *entertainment* systems. And while he can envision a two-computer family where an ECS and Aquarius system could coexist peaceably in the future, Mattel's aim with the ECS is only to bannish consumers' lingering timidity regarding computers, by offering the potential applications and capabilities in an entertaining and non-intimidating way.

"At the end of 1983, there will no longer be video game-only machines," Moscovitz says. "This is the year of transition between video games and computer systems—it's becoming one continuum. What kind of a system a family will buy is based on what the family wants to do with it and its budget."

He believes the majority of families in '83 will want to ease into computing as opposed to getting right into disk drives, spread sheets and writing 64K programs. The Intellivision ECS is their ticket to painless computing.

Still, when the family's knowledge and computing expertise grows, so can the Intellivison memory. Another new gadget—Mattel's program expander—gives users an additional 8K ROM memory including extended BASIC language and 16K RAM to write more sophisticated programs, process more information and play more advanced video games. The expander is expected to retail for around $80 and will then actually allow the ECS user to perform some of the same functions possible with the Aquarius. In fact, the Intellivision II user can plug the Aquarius thermal printer (selling for less than $200) or any of many printers on the market into his Intellivision for any specific hard copy functions. There's even the option of using Aquarius' Data Recorder (under $100) consumer-supplied tape recorder, which will operate in conjunction with the system to store additional information.

Mattel's BASIC Programmer software ($35), to be introduced with the Intellivision II and ECS system this summer, is an intermediate-level cartridge designed to be used with the program expander. On-screen lessons and a simple step-by-step manual take the user through the fundamentals of BASIC language and actually show you how to write your own programs. With the Intellivision BASIC, if you write a line of code, it appears color coded. If the computer doesn't understand the program or instruction, it doesn't color code it, so you instantly know you've made a mistake. This is Mattel's way of providing a nonfrustrating method of learning computer programming, Moscovitz says.

Did you say you always wanted to play piano? Well, Mattel's Intellivision II can do that, too—with a little help from its music synthesizer—a full-sized 49-key music keyboard. Mattel claims this peripheral, which plugs in-

to the computer adaptor, has the same look, feel and touch of a real organ keyboard. It is a six-note, polyphonic synthesizer, which means it can play six notes at once. The system isn't designed for the professional musician, although he or she probably could have a ball with it. Like the ECS computer add-on, the synthesizer is designed simply to teach all family members to read music and to compose their own melodies. Three new ECS programs, tentatively named Astromusic, Melody Maker and Music Conductor, were designed to help out the novice musician.

Astromusic is the musical version of the Astrosmash video game and is designed to familiarize fumbling fingers with the keyboard. Melody Maker helps the new musician compose melodies (which can be stored on cassette). And Music Conductor serves as a built-in private music teacher. With or without the software, when you play a note on the synthesizer, it appears on the screen.

Again, Moscovitz stresses the synthesizer, similar to peripherals, is designed to *entertain.* "There's a large community of people out there who are as intimidated about learning to play music as they are about using computers," he says. This gets them involved painlessly and easily. The synthesizer will sell for around $80. The music programs are $26 each.

Mattel plans a whole library of new ECS titles before year-end to supplement the 12 new games described. But for those Atari VCS game lovers, the company also will offer a System Changer, to sell for $80. Along the lines of expansion modules put out by other companies, this device allows the Intellivision owner to play any VCS-compatible cart on any Intellivision. To do this on the Intellivision I, however, owners must take their machine to an authorized Mattel service center for factory adjustments. There will be a service charge for this.

The Intellivision I, in fact, is being phased out of production and replaced by the Intellivision II, although parts will continue to be available for the original master component. Remember, these two machines are the same except for their outward appearance—Mattel's ECS peripherals and games fit both.

Mattel's target market, for all these innovations, naturally, are those consumers who already own an Intellivision. Still, if you're picky about all your components matching or are a consumer without a system at all, Mattel wants to give you a price break. They've put together a $250 package deal that includes the new Intellivision II, the computer adaptor and keyboard. This price may drop even further as market conditions change.

About the time you've got all your new Intellivision II peripherals together, Mattel will bring out its Intellivision III, slated for a Christmas debut.

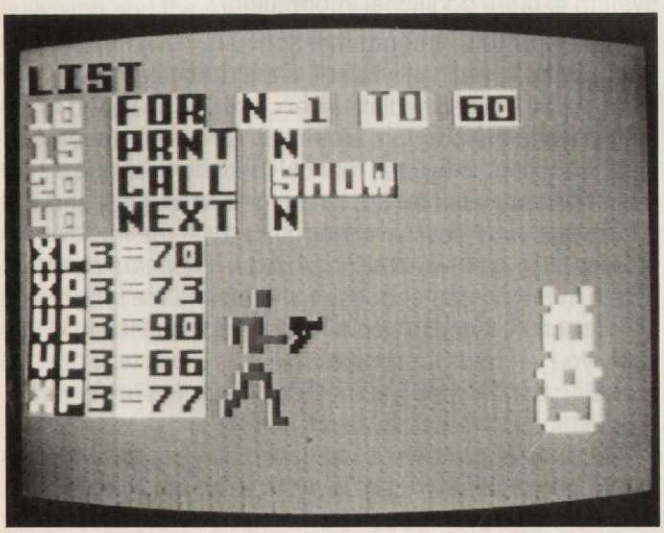
The III will be compatible with all the peripherals mentioned previously, but also will be an advanced game machine touted to surpass ColecoVision and Atari's 5200 in graphics and game play. The high-tech unit features LED (light emitting diode) readouts to indicate sound level, on/off, proper cartrigde insertion and pause mode.

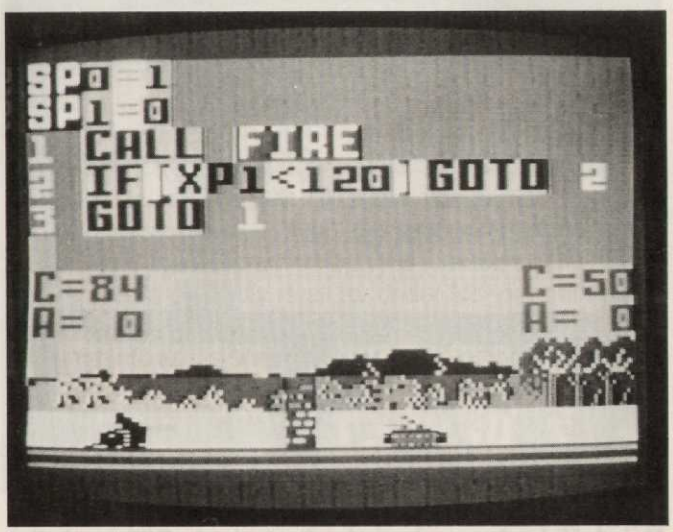
According to Mattel spokespeople, Intellivision III will offer built-in voice synthesis, high-resolution graphics with intricate detail, infinite colors and life-like graphics, as well as built-in voice allowing it to use specially programmed voice cartridges without the add-on Intellivoice. Six channels of sound effects and music can be heard through a stereo system with built-in stereo hook-up jacks.

The graphics and game play of Intellivision III are achieved via the use of 320 X 192 lines of resolution. The unit—unlike the ColecoVision, for instance, which can choose from among 16 colors—features a nearly infinite menu of programmable colors. Mattel also claims the system features the ability to move objects on the game screen twice as fast as other video game systems and can show more moving objects on the screen at the same time.

Remote battery-operated hand controllers, each containing tactile feedback keys and a full-size joystick, come with the unit, which is set to retail for less than $300, probably around $200. New games in the sports, space and adventure arenas are also planned in time for the holiday season.

— Anne Krueger





From the Entertainment Computer System's BASIC Programming line: Game Maker and Mr. BASIC Meets "Bits 'N' Bytes."

THE ATARI 2600 KEYBOARD

All in the Family

Under a veil of secrecy befitting Detroit car makers or the Pentagon, last February Atari took what many believed to be the next evolutionary step when they announced "My First Computer." It is designed to transform (in the company's words) the 2600 video game player into a "powerful home computer." Less than a month later, Atari decided that My First Computer was too limiting a name, and instead began referring to it as the Atari 2600 Computer.

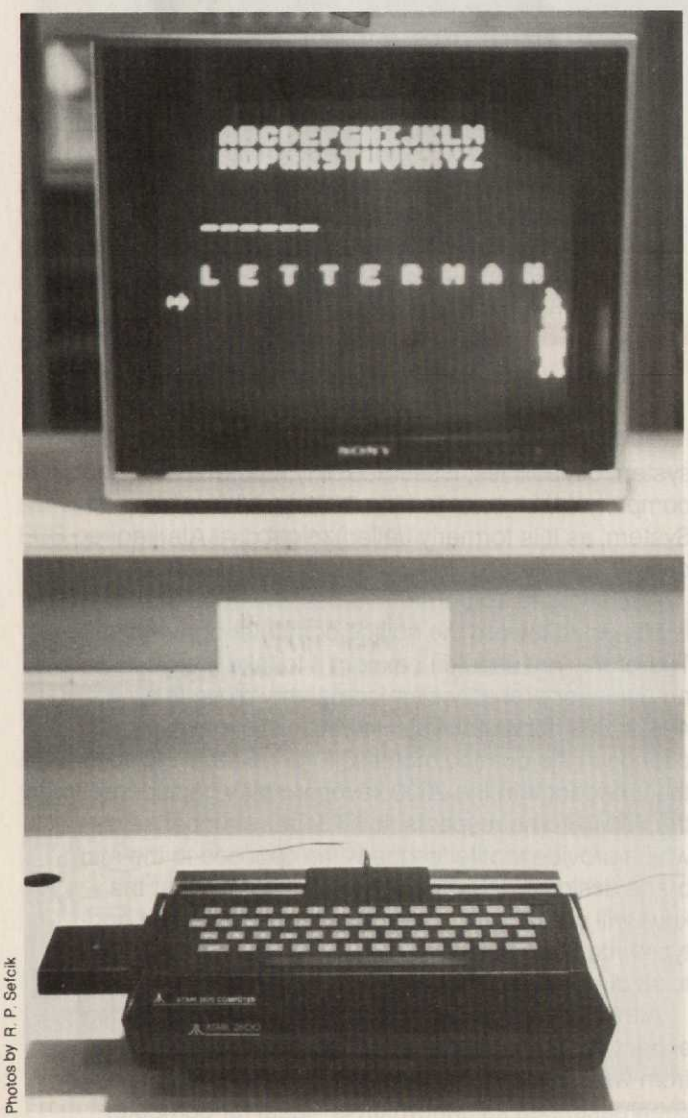
The change in the name aside, although the announcement may have seemed major to Atari, they were the fourth (or fifth, depending who you take seriously) company to announce the development of a keyboard addition to the 2600. Entex slated its "Piggyback" (suggested retail around $125) for late April; Spectravideo was preparing the CompuMate 2600 add-on (suggested retail around $90) also for this time, while Emerson announced a keyboard unit at January's Consumer Electronics Show. Emerson has since put a halt to those plans. With the encroaching competition and the obvious movement to expand basic game system capabilities, it seemed only natural that the company which invented the 2600 (or Video Computer System, as it is formerly called) might give Atari a definite edge in promoting its keyboard.

According to corporate sources, the 2600 Computer is "targeted toward the novice computer community." Therefore, you shouldn't expect it to take the place of an Apple, or probably even come very close to an Atari 400 or 800 computer, yet. However, this may well change in the coming months, if, for no other reason, than the fact that the 2600 keyboard may be superior to the 400 in some respects. It will feature rubber keys, which provide tactile feedback (as opposed to the membrane design of the 400). A disadvantage is that the keys will probably be closer together (providing a non-typewriter feel) in order to allow the keyboard addition to sit directly atop the 2600.

Although the name has already been changed, don't expect the emphasis on support to be much different from what the original title suggests. The system has been described as one which is "ideal for computer

Michael Moone, president of Atari's Consumer Electronics division, joins actress Drew Barrymore in announcing the 2600 computer.

"... The system has been described as one which is 'ideal for computer novices...'"



Photos by R. P. Sefcik

novices," while planned software will emphasize home management, education and personal development. There also will be a line of specially designed games and, with expanded memory (8K RAM standard, expandable to 32K) the system will be capable of providing improved graphics and, probably, faster game play. Because of this, as a game playing peripheral, the computer add-on may well represent a worthwhile investment in its own right.

Initial releases will be in the form of cartridges, which will load into the expansion port on the left side of the device. This port has also been designed to accept upcoming specially-designed peripheral devices, including a modem, which would allow communication over the telephone lines with other computers, possibly a low cost printer, and maybe even a floppy disk or wafer data recording device. In addition, there is a built-in interface that facilitates the recording and playback of user-written or specially-designed programs, data, and games. But that's not all. Present plans would allow the keyboard to interface with any cassette recorder having an earphone or output jack to further expand its capabilities.

There will be a built-in programming language, probably a modified version of Microsoft BASIC, which is easily learned, and allows owners to begin programming after a brief getting acquainted period. More powerful programming languages (requiring increased memory) will probably be offered for those wishing to make even better use of the computer add-on.

The 2600 Computer is planned for release in the third quarter of this year (but more realistically, look for it to be available around Christmas), with the keyboard expected to retail for about $90.

—Mark Brownstein

ENTEX 2000 PIGGYBACK

Added Attraction

After you've played your 50th VCS game and scored your zillionth alien blast, the feeling of satisfaction may just be replaced by a little emptiness. Something's amiss. You don't remember when the uneasiness began, but suddenly there's a sense that you should be *learning* as well as *playing* games. And it's nagging at your thoughts with each twist of the joystick.

The scenario is one that Entex (303 West Artesia Blvd., Compton, Calif. 90220, 213-637-6174) is banking on happening in the coming months with the release of a special add-on keyboard called the Entex 2000 Piggyback Computer. The system is squarely targeted at millions of gamers poised on the threshold of the so-called "learner's market"—all ripe and ready to set foot into the wonderful world of real, honest-to-goodness home computing.

"Our dual thinking in developing the Piggyback was that we wanted to create a low-cost alternative for game machine owners who weren't necessarily ready to shop for a full-fledged system," explains Norman Block, Entex vice president. "Secondly, we wanted to find a way to make the machines themselves more useful to their owners."

Entex's motives weren't entirely altruistic, of course. The nearly 12 million Atari VCS owners in the U.S. alone constitute a healthy chunk of potential business for the company. Still, Entex has a reputation for judging the market carefully and rather than "jump on the keyboard bandwagon" it chose to bide its time, observing and waiting for what they hope will be the golden opportunity.

During the wait, Entex engineers began drawing up a list of possible specs for their embryonic unit. The research team agreed the device had to be powerful enough to rival other potential low-cost competitors, but also expandable enough to offer users several more applications than other low-cost units, and thus yield more "bang for the buck" and "performance value" as

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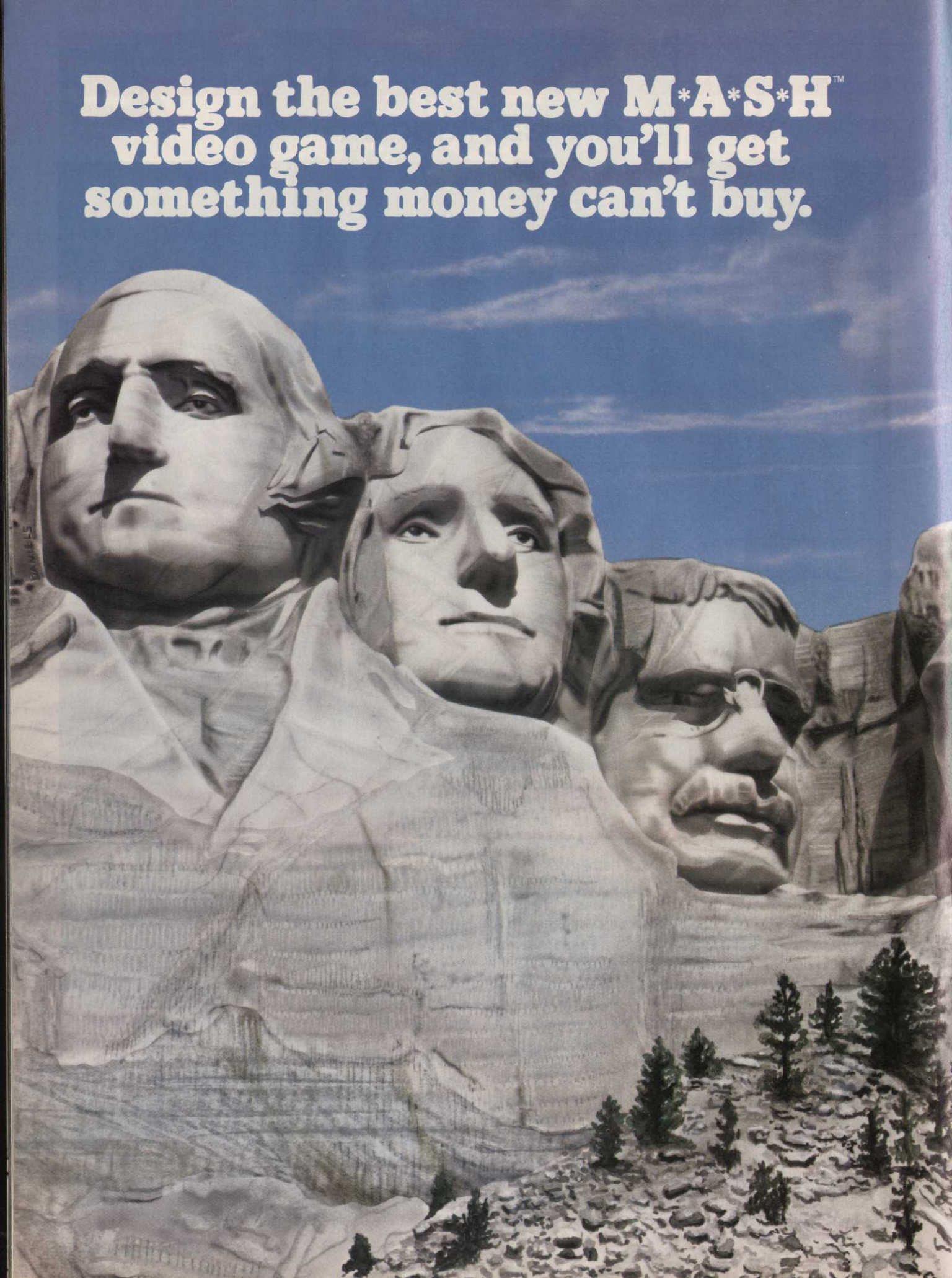

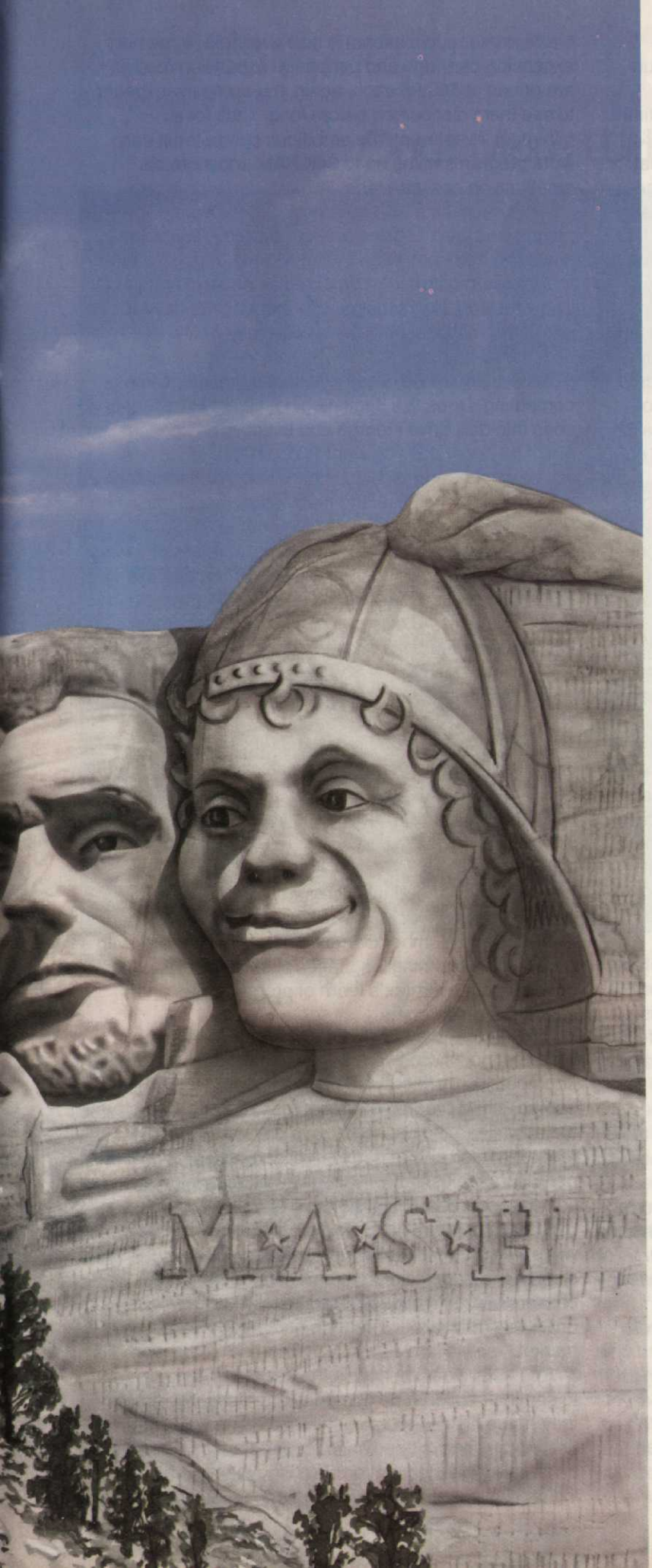

Fame.

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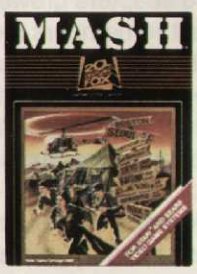


20th CENTURY FOX

Games of the Century

THE M•A•S•H™ CONTEST. IT'S A SMASH.

marketeers are fond of saying. Communications capability, program and data mass storage and a bundle of memory to enable the first-timer limitless experimentation possibilities, it was decided, were definite prerequisites.

The wait ended last January and the Piggyback has emerged as a "gem in the marketplace," according to Block. "We bowled them over at Toy Fair," he reveals, referring to the number of orders generated by the system's New York retail introduction last winter. True to its promise, Entex delivered a system that is both powerful and easy to use, as well as expandable.

At the center of the Piggyback's performance system is an 8-bit Z-80A microprocessor—a very respectable cpu for a starter unit. Coupled with this high-speed chip is 8K of built-in ROM BASIC that also holds the video and graphics display software: 128 characters and a 32 x 16 character display for comfortable viewing on a color or black and white television set.

The 70-key keyboard includes nine special functions (F1 through F9) and four cursor movement keys (left, right, up, down)—a convenient feature not included on many existing low-end machines. As for price, how does *under* $129 sound? Quite attractive, believes Helen Fleischer, Entex marketing manager.

"Why go out and buy a whole new system when you can simply add on to your home game?" Fleisher says. "We figured in pricing the Piggyback this low, people would consider it a small investment for a big value."

It doesn't matter which game system tickles your fancy—Entex sells a Piggyback converter for a mere $7 (probably less in certain stores) to fit the Atari 5200 and Sears Super Arcade, as well as the Intellivision I and II. The Piggyback doesn't require a converter to plug into Atari's VCS, the Sears Telegame or the ColecoVision and the new Coleco Gemini system when both of the latter are used with ColecoVision Module #1 (the Atari VCS adapter module).

All the talk of converters and adapters grows confusing but Fleischer says if one just remembers the word "flexibility" then you'll understand what Piggyback is all about. "We mean to make the Piggyback available for every game system in the market—maybe even some we don't yet know about—and thus for every video game user," she stresses.

Today's major limitation in low-cost computing is the small amount of random access memory that can be made available economically for programming. The more internal memory, the more expensive the system. To overcome this handicap, Entex offers optional 16K RAM memory expansion cartridges which plug right into the side of the Piggyback. Up to two memory expansion carts may be accepted by the system, thus increasing the internal memory to 3K RAM (only 2K of which is actually usuable because the other 1K is needed by the computer to control the video display) to a generous 34K total.

Additionally, a peripheral expansion module with room for cassette recorder interface, an RS-232 interface for communications with a data base (or with another Piggybacker!), and parallel I/O (for possible future printer applications) is also available. A memory expansion cartridge and peripheral expansion module are priced at $69.95 each, again, the company expects to see them discounted before long. Thus for a minimum investment, the ambitious computerist can write programs using up to 34K RAM and store his creations on cassette tape.

"The cassette interface is provided especially for people who wish to grow with our system," Fleischer says. The company hasn't yet decided, though, whether to supply a modem, printer, or a disk drive. In typical Entex fashion, the manager comments, "We have to consider additional peripherals carefully. Our prime user would be someone who already owns a video game system and is ready to take the first steps into computing. Does this beginning user want to get knee-deep into disk drive storage and telecommunications? And if he does, does he want to do so through Entex or will he want a more sophisticated personal computer? We are weighing these and many other questions before going ahead with new devices."

Entex, however, will provide stores with lists of third-party manufacturers and their models of compatible equipment that can be hooked up with a Piggyback. In addition, the firm is also examining possible combination modem/data base subscription deals such as those currently offered by The Source and CompuServe in conjunction with Atari, Texas Instruments, Commodore and others.

The Entex philosophy regarding Piggyback software is "let Atari do the games. Piggyback is a learning computer—we'll create the educational programs." The first group of five or more instructional packages will be available shortly, including BASIC Programming (included with the Piggyback), Home Finance, Beginning Math, Spelling and Algebra. Future releases including Computer Typing, Speed Reading, Word Games, Sports Statistics and Number Games. There's even more, with several programming languages such as LOGO, under development by Entex's team of programmers and educators/researchers.

"We generate an awful lot of material in-house," Fleischer notes. Software will be in cartridge form and "competitively priced" the manager adds. And, of course, junior programmers can easily create and store their own learning packages on a cassette tape recorder. Itself a third-party supplier, Entex knows of no other companies that will act as additional Piggyback software sources.

Starting next month, Entex will fill the television airways with "learning is fun" and similar education-slanted messages aimed at parents—the major purchasers of the Piggyback. Traditionally a toy maker, Entex has officially entered the computer "learner's market," says Harold Frankel, director of marketing. "What we are seeing now is the desire of many parents to see their children be computer literate by the time they reach high school, much in the same way they used to buy encyclopedias in preparation for their children's higher education. The Piggyback is the 'living' equivalent of the encyclopedia." —*Suzan D. Prince*

ODYSSEY 3 COMMAND CENTER

Once More With Feeling

The chant starts low and builds, growing louder and louder until it fairly rings in your ears: "The keyboard is the key! The keyboard is the key!" It's all figurative, of course. No one at the Odyssey division of North American Phillips Co. (I-40 and Straw Plains Pike, Knoxville, Tenn. 37914, 615-521-4316) really goes around repeating the mantra. But the company that put a keyboard on a home video game machine before it was fashionable has, for the past decade, been telling players in its advertisements and showing them through its games that a keyboard can add not only interest and challenge to an ordinary cartridge but a valuable skill to the beginning computerist's repertoire as well.

The chant continues as Odyssey unleashes its third generation machine—the Odyssey^3 Command Center. This time around the slogan will be uttered more fervently, for as clever as Odyssey^2's design was, the flat, sometimes awkward membrane keyboard and limited internal memory made it a definite third runner behind Atari's VCS and Mattel's Intellivision and then a fourth-place finalist after Coleco hit the streets last fall. Odyssey^3—years in development—with its full typewriter keyboard and expansion potential, presents a rough and ready contender affirms Jerry Michaelson, Odyssey vice president. "With more people aware of home video games and exposed to them—the arcade phenomenon, for example, has played a large role—we felt it was time to stress Odyssey's more advanced capabilities," he explains. "The marketplace is ready for it."

What consumers will find in late summer, when the new unit appears in stores, is a $199 console containing 16K ROM (read only memory), a vast improvement over Odyssey^2's mere 2K of brainpower. There will also be a full QWERTY typewriter style keyboard, along with three function (F1, F2, F3) keys that will be more completely utilized by owners at a later date when a variety of software packages and peripherals appear for "serious"

programming, according to Michaelson. Unlike the soft membrane experience, depressing the new keys elicits a satisfying, springy "click," much like the tactile feedback from a fine calculator. For the present, however, you'll only use these solid keys to start or reset the first offering of games slated for late summer and fall release.

Two self-storing joysticks are housed on top of the unit (left and right), plugged into the console via a three-foot telephone-type curly cord. Instead of the standard button array, a "fire bar," (similar to the space bar on a typewriter) extends the length of the stick. Pressing anywhere on the bar serves to fire a missile, jump, shoot or whatever—another first in the joystick arena. These sticks also permit better handling than the previous Odyssey^2 versions. Unlike Atari, Coleco or Intellivision joysticks, the new Odyssey controls are unhampered by calculator keys or function buttons since these can be preserved on the keyboard instead. The only item missing, really, is a pause feature.

If you want to get even fancier, however, Wico makes a plug-in Command Control joystick pair compatible with Odyssey^3 at $44.95, and a trackball at $69.95. To our knowledge (and N.A.P. Co.'s) Wico is the only outside supplier of accessories and peripherals for the new machine.

". . . The keyboard is the key—the key to greater video game challenge, interactivity and programmability . . ."

The main console has been streamlined considerably to resemble (ever so slightly) the Atari 5200. Its compactness is in response to Odyssey^2 users' complaints that the old unit was too big and clumsy. Outerware notwithstanding, the new system's insides will do justice to what is being attempted. Herein lie circuits with graphics capabilities the likes of which have never before graced an Odyssey screen: more memory, which means more room for color displays, object and character generation—even animation. A more powerful cpu will permit fast program execution and easy-to-use commands for self-programming.

"From 1972 to 1978, games of the dedicated chip variety first sparked interest in the category among consumers," Michaelson continues. "However, since 1978, and the introduction of programmable game systems such as Atari and Odyssey^2, there has been a tremendous and rapid market expansion. The last five years have brought more and more recognition to the entertainment value of home video games."

Thus, he explains, a new system had to be born. "The new unit is in response to the evolution of game system technology and players' growing sophistication and desire for computer functions," Michaelson reveals.

In fulfilling such desires, the Command Center features a rear port into which the machine's first add-on, the Voice Module, can be plugged. This speech and sound effects unit, containing a General Instruments-developed speech circuit, differs from the one that fit on the old Odyssey by the fact that this version simply snaps into the back of the main unit. The newly designed Voice Module is also smaller and less obtrusive than the first and the need to play voice-enhanced cartridges *through* the Voice no longer exists. Rather, the console's center cartridge slot accepts all games and program packs.

While the Voice will be available four weeks after the introduction of Odyssey^3 at an as yet undisclosed price (although a fair guess would be about $100, the same as the old Voice, since the technology isn't substantially different), a telephone modem will also appear. When the telecommunications module, as it's called, is plugged into the console's rear port, it turns the Odyssey into a "dumb" terminal—and gives the user unlimited access to the outside world from such data bases as The Source, CompuServe and Dow Jones for stock updates and business news. A price for the optional telecommunications module also hasn't yet been established, but there's some speculation that Odyssey may go the route of many computer companies and offer customers a communications package deal through retailers. (For example, buy the module with accompanying communications software and get one free hour or one free hookup from The Source, CompuServe, etc.)

Odyssey's modem is manufactured by American Bell; it's a model 103 with full duplex, 300 bits per second (bps) transmission rate, that's directly connectable to your telephone and switchable for answer or originate modes. Owners will use the keyboard to control communications options such as signing on to a data base, send/receive for electronic mail and other cryptic messages.

The third card in the N.A.P. deck is the plug-in computer programming module, scheduled for release around Christmas, which will form the foundation for Odyssey^3's advanced programming capabilities. The programming module will provide the user with 16K RAM (random access memory)—enough to write simple games, keep a budget, daily schedule or store short memos, as well as much more. To serve any potentially extensive programming needs, the company will offer optional mass storage packs for data and program retention, says Mike Staup, vice president and general manager.

Licensing big names for game cartridge has never meant very much to Odyssey. Because of the older generation's severely limited graphics potential, it was hardly worth the cost of obtaining a famous name license, since the quality of game conversion could barely live up to the title. N.A.P.'s in-house programming team has had to content itself with drumming up original concept games, mostly of an educational

nature—the genre that best showed off the old system's simple features. The introduction of the Odyssey³ may substantially change the emphasis, Staup reveals.

"Now that we have the improved graphic capability of our Command Center game console, we'll get more into arcade type games. We'll definitely be moving in that direction." Although the company won't confirm it, there's talk of an arcade hit being packed with the unit, but even as rumors continue to fly, it's a sure thing that Odyssey³ programmers will take advantage of licenses already acquired and produce newer versions than those previously available. These include voice-enhanced games based on the Ringling Brothers and Barnum & Bailey Circus theme, the World's Greatest Show trademark and the arcade game Turtles, by Konami.

Altogether, there will be three groups of games available for the Odyssey³:

- The entire library of Odyssey² games, now numbering more than 50. They won't be enhanced by the new system, but at least Odyssey² owners won't be left with a useless batch of obsolete cartridges.
- Selected Odyssey² games, which have been modified and redesigned, such as Freedom Fighters, an Asteroids/Defender-type game (and probably Odyssey's best space game). In the new version, instead of a plain black field, a colorful moon and a large red asteroid float about the screen. Baseball has also been redone to show dugout, bases, pitcher's mound and fans in the grandstand. Pick Axe Pete, another remake, in which a brilliant brick-like field now surrounds Pete; Smithereens, in which the new background is reminiscent of ColecoVision's Smurf scenes depicting rolling blue countrysides; and finally, Attack of the Timelord, in which the earth, with a geographically correct map of the U.S., gives you added movitvation to "Defend Your World." These titles round out the revamped eye-pleasers, although the graphics-enriched carts won't appear the same visually when played on the older system.
- Brand new games for the Command Center exclusively. Here's where everything gets interesting. According to Rex Battenberg, Odyssey programmer, the new cartridges will contain and utilize a full 32K of ROM—just like many ColecoVision cartridges, which should give an idea of the potential graphics content and quality to come.

"By increasing the ROM, we can do a great deal of little game-enhancing surprises," Battenberg says, "such as completely filling a background which formerly would have been bare due to lack of memory. We can also make objects move around in the background where before they would have just sat there, if indeed existed at all." Best of all, the designer notes, there will be two-screen games such as those made popular by Starpath and other VCS suppliers.

Flashpoint is one of the two-screen games set for pre-holiday release. Players maneuver a tank from a position high above a city (you're actually floating above it) through the streets in order to monitor six or seven small squares scattered throughout the metropolis. Each flashes on and off threateningly, and the "flash point" occurs within 10 seconds—if you don't reach it, with that section of the city reduced to rubble. Reach it and you're transported to the next, entirely new screen, where you see little marching aliens coming at you from all directions. If you're fast enough to destroy them as they approach, your score will mount in proportion to how much of the field they haven't trampled. Live or die, it's back to the city to find another flash point and vanquish more aliens.

Inspired by the arcade heavyweight Robotron, Battenberg's goal in creating Flashpoint was to "utilize as many of the new Odyssey³ features as possible"—essentially to showcase the system. The background, for example, becomes a bright blue maze once a player has reached a flash point. Then there's the two-screen concept that Battenberg intends to carry out in future games. Flashpoint is also Odyssey³'s first one-player, two-joystick cartridge. "It adds challenge," the designer says, with a hint of understatement.

Another new game is called the Adventures of Sherlock Holmes. Still under development, this adventure game features Moriarity, who informs you that he is about to commit a crime and you must discover the clues that lead to his capture. The company is being very close-mouthed about the four remaining debut games but, in general, given Odyssey's educational bent, you can expect cartridges in that genre as well as more arcade titles and, eventually, all manner of programs to encourage the beginning home computerist.

> "... We felt it was time to stress Odyssey's more advanced capabilities. The marketplace is ready for it ..."

Additionally, Imagic's immensely popular Demon Attack will be made compatible for the system, and the software company, currently the only outside Odyssey supplier, says more Imagic challengers are on the way.

N.A.P. hopes Odyssey³ will make its way into the homes and hearts of users as an entertainment console that's smart enough to perform computer functions as well as play challenging games.

"Odyssey³ is intended as a system that can serve as a basic game terminals, but with capabilities to give it a high degree of importance to parents who don't want their child to be left behind in the computer age," Michaelson states, adding, "our advertising will ease youngsters and their parents into the newer system by continuing to emphasize 'the keyboard is the key'—the key to greater video game challenge, interactivity and programmability."

—Suzan D. Prince

COLECOVISION'S KEYBOARD COMPUTER

Making the Grade

Ever since Coleco's announcement of the ColecoVision home game system, the suggestion that a computer upgrade would be available hasn't been far behind. Indeed, this may be one of the reasons many people bought the system in the first place—the idea of a quality home game unit that could evolve into a high-powered computer is certainly a promising one.

Coleco continues to seduce the public, and advanced information about the computer system at this stage reveals that it will be a "high powered home computer with all the peripherals required to use it. It will be a full-functioning all-in-one unit." The user "won't need to purchase other equipment. It will be supported by a tremendous software package."

In spite of attempts to keep an extremely tight lid on information before this month's announcement at the Consumer Electronics Show, we have been able to make a number of educated guesses about the module based on the internal structure of the ColecoVision (which defines what a keyboard would be allowed to do and also defines display characteristics), subsequent expansion module announcements, and what has already been announced.

First, and most obvious, the keyboard will attach by means of the expansion port at the front of the unit, or the front of Expansion Module #3, the so-called Supergame Module. In addition to the keyboard, expect built-in BASIC (or modified ColecoBasic) programming language, a thermal or impact printer, and a built-in record/playback unit.

The display will consist of a 40 character per line, 24 line, two-color display. The system will make use of the ColecoVision's internal 16K RAM, and will have an additional 8 to 16K RAM (of which 4-7K will be tied up for BASIC programming language). The keyboard will sit atop the unit and will provide access to the on/off switch on the console.

Coleco has announced that it will provide extensive software support for its computer system, so don't be surprised to see a preliminary start-up software package included with the unit. (Its release of Donkey Kong with the ColecoVision, Turbo with Expansion Module II, Slither with Roller Controller, and two games with Expansion Module #3 establishes a precedent that Coleco will carry through on its $175-200 keyboard).

Expansion Module #3 is a major part of this system, although Coleco is noncommittal about its capacities as anything other than a game-playing device. The expansion module consists of a 128K microwafer loaded system capable of both playback of prerecorded data (the game-or-program-loading feature) and recording of generated data. Microwafers are an inexpensive (around $3.00) method for rapid storage and retrieval of up to 128K of data.

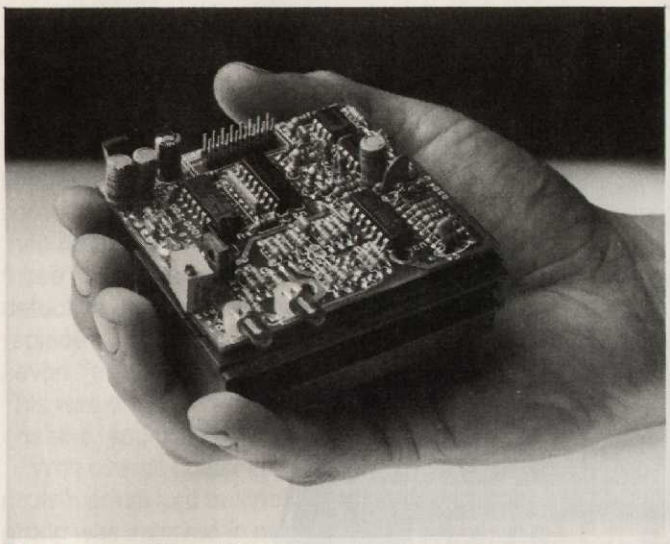
In addition to the capacity to record and play back data, the module also carries 16K RAM. Added to the 16K already built into the ColecoVision, and the probable 16K built into the keyboard, the three-piece system will provide 48K, of which about 42K will be usable memory. Since Coleco has announced a system with all the peripherals needed to operate the unit, it is questionable as to whether Coleco will go to the expense of providing an additional recording device that will see little actual use.

Look for the keyboard unit to carry over the basic black with silver accents, to be well-made and well-engineered, and to have a somewhat boxy appearance. Our guess is that it will be well supported, initially by Coleco, and in short order by third-party programmers. Coleco's choice of microprocessors to run the ColecoVision (Z-80A) makes machine language programming for this unit accessible to many Z-80 programmers of other computers (including the Radio Shack TRS-80).

— Mark Brownstein

COLECO'S SUPERGAME MODULE 3

A Slice of Life



The Entrepo Micro Drive

Entrepo's Micro Transport

Coleco announced its SuperGame Module (Module #3) at the February Toy Fair. This device is capable of playing back over 128K of memory (or enough data for up to 100 game screens). Unlike the typical game cartridges, the new Supergames come on a device called a Microwafer; a thin endless-loop tape cartridge, about the size of a business card (1.6" × 2.7" × 0.2"). You can think of it as something like a midget 8-track tape cartridge, since the tape only moves in one direction, with the beginning and end spliced together. The device used to record onto and play back the microwafers is called a microdrive, which is designed to operate up to 20 times faster than an audio cassette drive, while allowing much more rapid loading and unloading of programs.

A little about the manufacturers. The microdrive system was developed by a firm called Exatron, which previously created the system for mail order sales to owners of the Radio Shack TRS-80 as an inexpensive storage device that was superior to cassette tapes and less expensive than floppy disk drives. The drives were also sold as peripherals for memory typewriters, and recently were added as storage devices for the VIC-20 and Commodore 64 computers.

Last February the Exatron Corporation changed its name to Entrepo (meaning "a storage place") to reflect its emphasis on data storage and announced that it would be moving manufacturing facilities to the Far East with the expectation of producing 250,000 microdrives and 2.5 million microwafers a month.

The philosophy behind the microwafer is simple: the personal computer market is rapidly expanding. Data storage is an important aspect of any computer system. Before the microwafer, there were two storage alternatives: disks and cassette tapes, but both had their problems. The disk storage was rapid, relatively error free, and also expensive. Why should a person who pays $150 for a VIC-20 have to pay $300 to 500 for a disk drive? Cassette tapes are an imperfect medium for data storage. They're certainly less expensive than disk drives, but are slower and prone to more errors. The microdrive is a middle-range alternative. Running in the $125 price range, it's capable of recording up to 128K (equivalent to many disks), and is faster and more accurate than cassette tapes.

Coleco and Texas Instruments have both contracted to use the microdrives. In the case of Coleco, the drive is manufactured for the company and built into its Expansion Module #3 Supergame module. Certainly the capabilities to record and play back, plus the 16K RAM memory built into the module, strongly suggest the microdrive's use as primary data device for Coleco's new add-on keyboard for the ColecoVision. There are no provisions for duplicating programs from the module onto other devices, so proprietary games, and so forth will be relatively safe from piracy.

Texas Instruments announced its wafertape drive (suggested retail: $139.95), designed for use with the company's TI 99/2 and line of personal computers. Though it's not immediately compatible with the 99/4A, the company offers a Hexbus converter for about $60

The microdrive system (also known as stringy-floppy) fills an apparent vacuum between cassettes and floppy disks . Undoubtedly we haven't heard the last of microdrives and the wafers.

— Mark Brownstein

ASTROCADE

One More Time

The year is 1976 and Atari is busily developing what will soon be known as the Video Computer System. It is designed to accept cartridges which push into the top of the unit and allow individuals to play games on a regular television set. With about 600 bytes of storage capacity, the unit will be enormously successful.

Meanwhile, across the country, Jeff Fredrickson, of Dave Nutting & Associates, the design wing of Bally/Midway, is busily developing its own home game system that will be known as the Bally Professional Arcade. It will be designed to accept cartridges that load similarly to a cassette tape (and even look like them), while allowing owners to play games on a regular television set. It has at least six times as much game storage capacity as the Atari VCS, but won't be the success it should have been.

By now, everyone knows something about the VCS. With estimates of about 12 million units out there, and seemingly non-stop television commercials for compatible cartridges, it has touched every game player's life. The Bally unit, on the other hand, has sold, perhaps, 120,000 units, has had limited television advertising (a short campaign last year under its new name and ownership, Astrocade), until recently no third-party software developers, and remains one of the better-kept secrets in the history of home video game systems.

Bally's plan was to introduce a BASIC programming cartridge which would allow the user to write his own programs, games and learning activities, as well as some limited home management monitoring. The cartridge was introduced about a year after the release of the master unit when a cassette interface, permitting the recording of programs and playback through the computer, was also introduced.

Bally's planned third step would have satisfied those users frustrated with the limited capacity of the original unit and BASIC programming cartridge. A keyboard computer, dubbed "Z-grass" (for the graphics oriented, user-friendly operating system) was announced with the introduction, in 1977, of the Bally Professional Arcade.

This computer was scheduled to have 64K RAM, 32K internal ROM, a full-sized keyboard, broadcast quality

video, dual audio cassette jacks with motor control, RS-232 Input/Output interface and CPM compatibility. The Z-Grass 100 (a later *iteration* of the original design) was designed to be a full, state-of-the-art computer. So what happened?

Well, to fully understand the answer, it's important to trace the history of the arcade system. Although initial orders were taken in September 1977, Bally wasn't ready to fulfill its orders for a few months. Those units were, on the whole, defective, with heat-sink problems being the major difficulty. A user would buy the unit, take it home, turn it on, and it would overheat, frying some of the sensitive components. The system would then have to be returned to the dealer and many of those first sales ended up being non-sales, with the defective units returned for refund, rather than being replaced by working units. It took some owners six or seven "trade-ins" before getting one that was reliable. This was enough to discourage most potential purchasers, and marked the system from the beginning.

With overall corporate attention focused on other growth areas and business activities, Nutting's design group was involved in perfecting the design of the Z-grass computer add-under. According to Nutting, this went through "at least 12" revisions, and when he was finally satisfied that an acceptable unit had been developed, Bally management decided to abandon the endeavor, principally because of quality problems, and the resulting slow sales.

Astrovision (which changed its name to Astrocade) entered the picture, purchasing the license to manufacture, market, and develop new hardware and software for the Bally Professional Arcade. Astrovision also apparently purchased all units and components still at Bally. The Nutting design group and Action Graphics, which was then a wing of Nutting, would provide software and engineering support to Astrocade but, in the words of Nutting, "no money."

Until Astrocade finally began releasing new software in late 1981, there had been no cartridges available for approximately two years. Lack of product would have doomed most systems (as it had Fairchild's Channel F), but not the Professional Arcade. And, in 1977, the unit was touted as an expandable home computer. Promoting it this way succeeded in attracting buyers who, for the most part, desired to get into computer programming (the VCS buyers were mostly interested in playing games), thus keeping the system alive.

Robert Fabris, publisher/editor of *The Arcadian,* a newsletter which publishes programs and information about the system, began his publication in 1978. He has been one of the major forces keeping it going since that time. His publication, meanwhile, has served as a link between the owners of the unit, and has also been a major provider of information by both Bally and Astrocade. It was through this publication that many of the third-party programmers have sold their cassette-tape loaded programs for the system. However, Astrocade never reached its anticipated goals, releasing only a few cartridges, abandoning plans for a keyboard, and finally declaring bankruptcy last year.

The first computer add-on was introduced in June 1980. Called the Blue-RAM ($180 assembled, $140 kit) it was designed by John Perkins, of Perkins Engineering. The unit provided 4096 bytes of memory, which could be designated either RAM or ROM by moving a switch, 128 bytes non-protectable ROM, and allowed games to be transferred to Blue-RAM and recorded onto tape. Also available was an 8K extended BASIC cartridge ($49.95), for more complicated programming, and simplified graphic design and game development. Perkins Engineering also offered a 62-key keyboard ($89.95) which simplified the entry of programs into the system, a specially designed modem/printer interface ($99.95), a Blue-RAM operating system ($9.95, which allowed development of longer programs), and a BSR controller ($19.95), providing the Professional Arcade with the capability to control up to 16 lights or appliances in the home.

Perkins Engineering now also offers a 16K system ($275 including 8K Extended BASIC), a kit for converting the 4K Blue-RAM to 16K, and a 32K Blue-RAM ($395 including extended BASIC). Both units take about three weeks to prepare before shipping.

In April 1981, Alternative Engineering introduced its Viper (Video Image Processing Equipment Research) System 1, a 16K memory expansion for the Bally Professional Arcade. The $275 unit included an 8K extended BASIC language tape, with special graphics routines and other features which facilitated programming. Available at extra cost was a keyboard ($175), and a 16K RAM card ($150). Expansion cables, multibus adapters, an EPROM programmer card, and an RS-232 interface card were also announced. In addition to these two manufacturers, other users developed light pens (to allow drawing on your TV screen, printers, other keyboard/memory expansions, and machine-language programming utilities (to program faster video games).

While the Blue-RAM and extended memory Blue-RAMS are still available, Alternative Engineering may stop production of the VIPER, for a very good reason—they have licensed the Z-grass operating system for use in an add-on keyboard computer. Sources at Alternative Engineering indicate that a unit has been designed to the basic specifications of the unreleased Z-Grass 100: 64K RAM, 32K ROM, and a 4K screen interface. The unit will have a full-sized keyboard, two cassette recorder interfaces with motor control, RS-232 ports, CP-M compatibility, and voice. The name for the device hasn't yet been decided and a cabinet design hasn't been finalized.

Marketing of the unit will be through Esoterica Limited, an Ohio-based producer of arcade software, with an already well-established distribution network. The company, which began by providing cassette tape-loading programs, has recently made available the first independently-produced game *cartridge* for the Professional Arcade. Future plans call for the computer to be released throughout the distribution network, with units hopefully on the store shelves when you read this.

—Mark Brownstein

HARD SELL

The VIC-20: A Programmer's Perspective

By Mark Andrews

The Commodore VIC-20 is the biggest little computer on the market. It weighs just about three pounds—only slightly more than the Manhattan telephone directory. But when it comes to computing power, it is certainly no lightweight.

The VIC-20 is so simple to operate—and comes with such an easy-to-understand instruction manual—that almost anyone can sit down and start using it without any training. And, believe it or not, it can also present quite a challenge to the expert programmer.

The heart of the VIC-20 is a 6502 microprocessor chip—the same chip used in Apple and Atari computers and the Commodore 64. The VIC comes with built-in Microsoft BASIC; two different varieties of enhanced BASIC are also available. The VIC can also be programmed in machine language. And the many special features of the VIC's keyboard, screen display and operating system make it an unusually easy computer to program in all of the languages that it understands.

The VIC Keyboard

For a computer of its size and price, the VIC-20 has an exceptionally versatile, comfortable, fast-action keyboard. It features movable keys, not a flat membrane keyboard like the Atari 400 or the Timex-Sinclair 1000. And it has concave typewriter-type keys, not the little, flat-topped, "Chiclet-style" ones that you may have seen on other small computers which, though lovely to look at, can make touch-typing a programmer's nightmare. And, almost every key on the VIC is exactly where you would expect to find it.

The VIC has 66 keys, including four user-programmable keys—a rare feature on a computer in the VIC's price range. Its keyboard can produce upper- and lower-case letters and a wide variety of graphics characters, each labelled on the front side of the key which accesses it in the graphics mode.

Up to eight different colors can be displayed on the screen simultaneously, and the colors of the text and characters

can be changed with a single keystroke—no programming needed. On almost every other color computer on the market, some programming is required for on-screen color changes.

The VIC keyboard does have a few shortcomings, though. Its cursor movement keys, for example, take a little getting used to. One key moves the screen cursor either left or right, and another moves it up or down, depending on whether the shift key is pressed. The keyboard could have been greatly improved if it had been designed with four cursor keys—one for each direction. In all fairness, however, there are many personal computers, such as the Atari 800, with less satisfactory cursor-key arrangements than that of the VIC-20.

Another drawback is that the VIC lacks any key for inserting or deleting full lines of text, and a method for deleting the character directly underneath the screen cursor. These are also minor faults, but together they tend to make life a little more difficult than necessary for programmers who were not brought up on the VIC-20.

Actually, it's probably a bit unfair to criticize this keyboard at all, considering the alternatives that other computers in its class offer. Despite its shortcomings, this is one of the best home computer keyboards designed to date—for touch-typists, as well as hunt-and-peck programmers.

The VIC Screen Display

Less ideal, as its designers have been known to admit, is the VIC's screen display. In text mode, only 22 characters can be typed across the width of a television screen. In comparison, Atari computers have a 40-character screen width, Radio Shack's Color Computer has 32 and most business computers generate an 80-character screen.

While the 22-column display may be easy to read, it limits the number of characters that can be shown on the screen at one time to 506 (22 columns across by 23 rows down), so writing and debugging a long program can become a difficult job, involving a lot of scrolling from one part of the program to another. All of that electronic page-turning can make word processing a frustrating task. There are a couple of ways to improve this situation. One is quite expensive; the other requires considerable programming knowledge.

The costly way is to buy a plug-in cartridge that expands screen display to 40 or 80 columns. Data 20 Corp., Laguna Hills, Calif., and Quantum Data, Inc., Costa Mesa, Calif., have versions that include 16K memory ($300-320). To use the 80-column option, however, requires a high resolution video monitor, along with some special interfacing circuitry. The cost of all of this equipment can easily total more than $1,000.

The VIC's text display can also be expanded by using memory expansion cartridges (to hold the extra screen memory you'll be adding), and then rewriting the computer's display and screen editor routines. But if you can program well enough to do that, you're not a typical VIC-20 owner.

RAM, ROM and Other Features

Random access memory (RAM) is memory space in a computer that is left empty by the machine's designers so that the user can fill it up with data and program instructions. As it comes out of the box the VIC has just 5K (5,000-plus typed characters) of random access memory. That's enough RAM to hold short, relatively simple programs—but not enough to write and run long, complex programs and games.

Fortunately, it's easy to expand the VIC's memory. By adding 8K and 16K expansion cartridges in various configurations, a VIC owner can easily increase the machine's RAM to as much as 32K. That's the same amount of memory that can be crammed into a Radio Shack Color Computer or a Texas Instruments 99/4A—both of which cost more than a VIC-20. But it's 16K less than the capacity of an Atari 800, and 32K less than that of Atari 1200XL and Commodore 64.

As important as RAM is, it's equally important for a computer to have a well-designed read-only memory (ROM) package. ROM is where a computer's brain power really lies; all of the permanent, preprogrammed instructions that tell the computer how to carry out user-written programs are stored in ROM. And the VIC-20 has an absolutely first-rate ROM package.

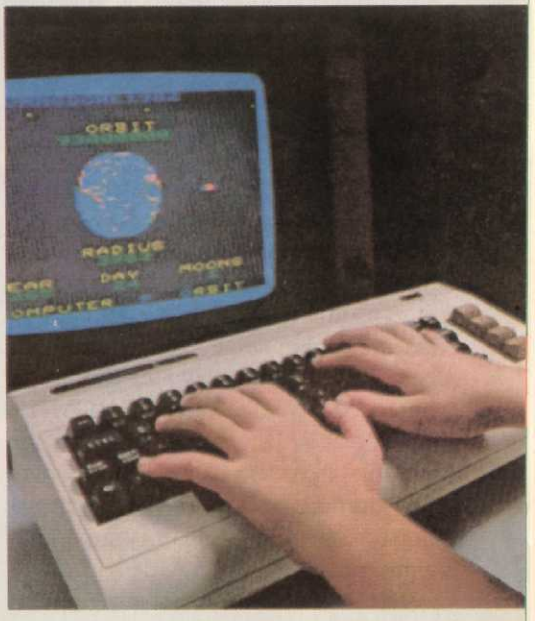
VIC BASIC, a slightly expanded version of Microsoft BASIC, is built right into the VIC's ROM: just turn on the computer, and you can start BASIC programming immediately.

VIC BASIC is almost identical to the dialects of the Microsoft BASIC used in the Commodore PET and the computers in Radio Shack's TRS-80 line. VIC BASIC differs considerably, however, from the non-standard BASIC dialects used by some other computer manufacturers, such as Apple and Atari.

One of the most useful features of VIC BASIC is the way it handles text. Here, words and phrases can be subscripted—in other words, defined as variables and then stored in lists called arrays. Then these subscripted variables—text strings, to use computer jargon—can be manipulated in programs almost as easily as if they were numbers. In some other dialects of BASIC—Atari BASIC, for example—the subscripting of strings is not possible.

Another special feature of VIC BASIC is a "SAVE" command that allows file names to be assigned to programs stored on cassettes. (Programs stored on disks can be given names in any dialect of BASIC.) In Atari and Apple BASIC, programs recorded on cassettes cannot be given names; they are simply recorded one right after the other, and must be located using the counter on a tape recorder. That's a sloppy way to keep track of a program, and it can make it difficult to find saved programs.

Another useful command in VIC BASIC is "DEF FN," which means "define function." This command allows complicated mathematical formulas to be written out just once and then used in programs as many times as



desired. "DEF FN" is also used in Applesoft BASIC, but not in Atari BASIC, or Radio Shack's Color Computer unless an optional (and expensive) Extended Color Basic package is installed.

One exclusive feature of VIC BASIC is a "TI$" (time string) function, which can be set by the programmer and consulted at any time thereafter to find out how much time has elapsed—in hours, minutes and seconds—since the timer was turned on. The TI$ function can be used to put a constantly running clock on a computer screen, or as a countdown timer in user-interactive programs such as games.

VIC BASIC also has an exclusive "VERIFY" command that can be used to check whether a program has been saved correctly on a disk or a cassette. This is an extremely useful command; it can rescue programs that might otherwise be destroyed.

VIC BASIC, like most BASICs, has a vocabulary of about 60 words. But its capabilities can be expanded considerably with two packages offered by Commodore, each of which includes a plug-in program cartridge and instruction manual. The Super Expander, $69.95, contains a set of special BASIC commands—including PAINT, DRAW, CIRCLE, COLOR and SOUND—that can be used to create music, special text modes and high-resolution graphics. The Programmer's Aid, $59.95, lets the user change the assignment of the function keys—to a BASIC command, number, graphics, text—any information up to 10 characters long. Super Expander also includes more than 20 BASIC commands which streamline the writing, editing and debugging of programs.

There's also a VIC software package designed for assembly language programmers. Called the VICMON ($59.95) it includes a machine language assembler and dissembler, as well as a machine language monitor. Unfortunately, the VICMON is a rather rudimentary machine language assembler. For some reason—probably because of the memory limitations of a basic 5K VIC-20—the VICMON doesn't allow the programmer to use variables in programs or labels to identify subroutines. And there is no provision for inserting explanatory remarks in a program.

The VICMON is fine for writing short machine language routines that are designed to be called up from BASIC programs. But because of its limitations, it would be almost impossible to write a long, complicated machine language program using the VICMON. In fact it's actually easier to write assembly language programs for the VIC on other 6502-based computers—such as those from Apple and Atari—than it is to write them on a VIC. The situation will undoubtedly remain as such until a better machine language assembler for the VIC-20 comes along.

If the VICMON's faults sound like bad news, there's also some good news about the VIC-20 for assembly language programmers. An exclusive and very powerful programming aid, called a Kernal, is built into the VIC's operating system. The Kernal takes up a full 8K of memory space but is well worth it to the assembly language programmer.

The VIC Kernal is essentially a jump table that contains the addresses, or locations, of many of the VIC's most important built-in subroutines. By using the Kernal, a machine language programmer can make the VIC-20 do virtually anything it is capable of doing, by simply instructing it to jump to an address contained in the Kernal. Commodore has guaranteed that as the VIC's operating system is updated, the Kernal table will be changed to match. That means that machine language programs written using the Kernal table are guaranteed to work on future versions of the VIC.

The Kernal can simplify machine language tremendously. In a sense, in fact, it is almost a full-fledged programming language itself. There is no reason why a skillful assembly language programmer, armed with a good assembler, could not use the VIC Kernal to write programs almost as quickly and easily as they can be written in BASIC. And the Kernal concept has an important side benefit, too: since it uses subroutines that are already in the VIC's ROM, it saves the memory space—as well as the time — that it would require to rewrite them.

Programs That Teach Programming

Experienced programmers can plunge right into the world of VIC programming by reading the *VIC-20 Programmer's Reference Guide* ($16.95). For VIC users who want to learn programming, or improve programming skills, several prepackaged programs are designed to do just that. For young programmers, there's a new software package called "Gortek and the Microchips." It includes two program cassettes and a comic book which combines a space adventure story with instructions in BASIC programming.

For adults, there's a programming series called "An Introduction to BASIC" (Parts I and II). Each package in this series contains two cassette tapes and a workbook over 150 pages long. Together, the two packages contain just about everything a BASIC programmer needs to know, from how to use a computer keyboard to such sophisticated topics as string manipulations, searching and sorting, animated graphics, sound generation and creating games.

Conclusion

Commodore says that the VIC-20 is a "user-friendly" computer, and that the manuals and teaching kits designed for it are user-friendly, too. This is not an empty claim. All of the VIC instruction manuals published by Commodore are well-written, beautifully printed and easy to understand. They neither talk down to readers nor baffle them with incomprehensible jargon. There are plenty of examples and illustrations to help get important points across; the program tapes that come in the training kits for VIC owners are excellent, too.

The taped lessons include many useful and interesting demonstrations of the VIC's capabilities, as well as a host of cleverly designed quizzes that requires the user to input answers from the keyboard. There are programs on the cassettes that demonstrate good and poor programming techniques. There are even programs that contain intentional errors that must be debugged before they will work properly.

Add up all of this, and what you have is one of the most amazing small computer systems ever designed. The VIC-20 has a terrific keyboard, up to 32K of RAM, built-in Microsoft BASIC, superb color graphics and an ultra-sophisticated built-in music and sound synthesizer. And it now retails for less than $200.

Because of these features and factors, says Commodore, more than a million customers have now bought VIC-20 computers. Small wonder. ▲

VIDEO Sports GAMES Illustrated

Part 2

By Noah Greenberg

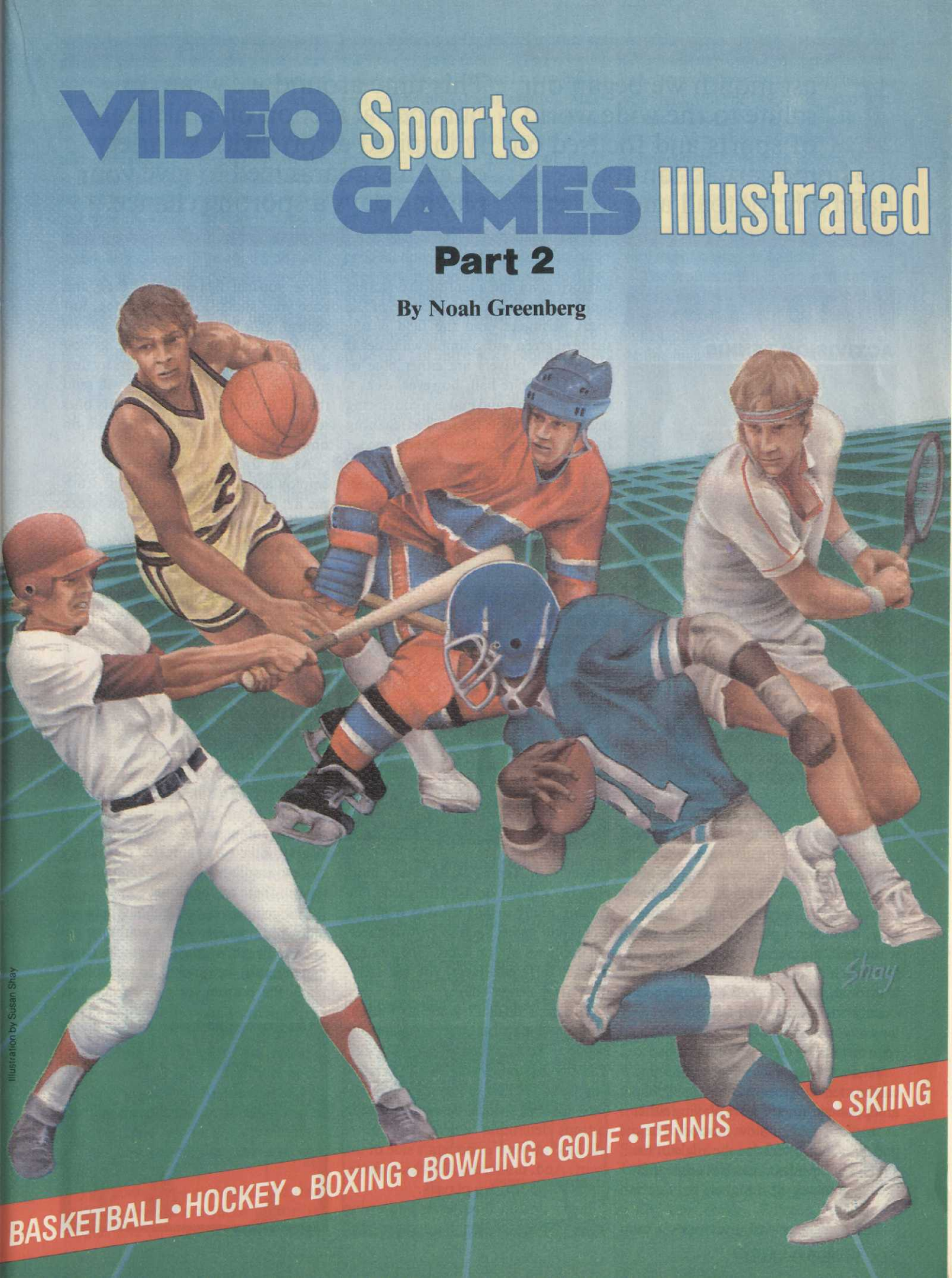
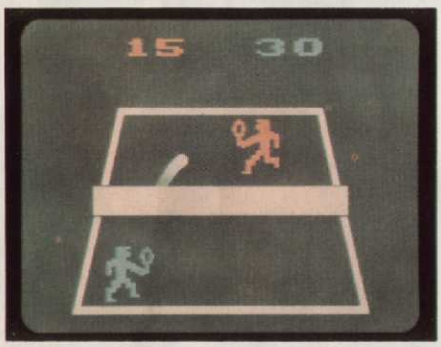


Illustration by Susan Shay

Last month we began our salute to the wide world of sports and focused on the home cart action for baseball, football and soccer. This time around we wrap up our special section on athletically inspired efforts with a variety of games guaranteed to give your playing days a sporting chance.

TENNIS

ACTIVISION TENNIS



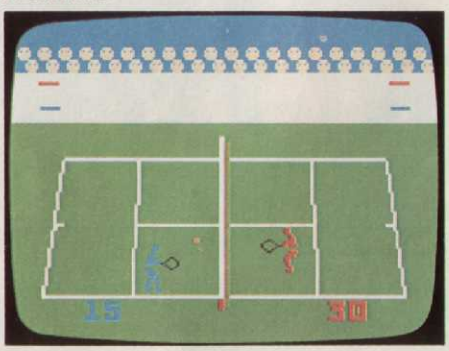
If you think that a video game based on tennis can be nothing more than a heavily ornamented pong game, you're in for a surprise. Activision Tennis is one of the most cleverly designed and entertaining games in the video world.

As in all Activision games, you can play against an opponent or the computer. Your vantage point is the same as on TV, which is above and behind the baseline of one of the players. The figures are well-drawn, racquet-wielding, joystick-controlled men. They're terrifically mobile and can move all over their side of the court, charging the net or whacking from the baseline. You use the red button only for serving. During play, whenever a player makes contact with a ball, the racquet will automatically return it across the net. Making shots is difficult, and you never really know exactly where your ball will go, but as long as you make contact, the ball will be returned in fair territory.

There are four game variations that can be used with the computer or against an opponent; they involve playing either at regular speed or slow motion. The *a* and *b* settings determine the angle of the shots; the *a* position has less angle than the *b*, making it tougher to return winners.

The game has well-drawn graphics, but their color and attention to detail are limited. The only lines are those of the court perimeter, and the field is one shade of green with a simple white net at center. The players are either blue or pink. The white ball, however, casts a realistic shadow and makes a convincing thud when it meets the racquet. Scoring is just like it is in real tennis, and one set ends the match. Directing the angle of the shot is tough: It's best to try to meet the ball. But do rush the net whenever possible, and try to get the ball where your opponent isn't.

INTELLIVISION TENNIS



Intellivision Tennis is an even more realistic simulation of the game, including many details missing from the Activision game, such as crowds cheering and lines on the court. The vantage point is different: Here, you see everything from center court.

This is a difficult game to master, because, here, nothing is taken for granted. You must position your man with the disk and swing by pressing the side buttons. You're given a choice of hard and soft swings; the bottom action buttons determine where your serve will land on your opponent's side of the court. And, unlike the Activision game, this is solely for two players.

Begin on the slow levels and swing softly. After you get the hang of the game, you can then employ strategy and pace your shots. In the beginning, just returning the ball in this complex game is a major accomplishment. But, as you adjust, you can place your shots by timing your swings. Late swings will send the ball to your player's right; early ones to the left; and, if you hit the ball on time, it will go straight.

As in the Activision version, you employ actual tennis techniques. Rush the net and hit the ball far from where your opponent is waiting.

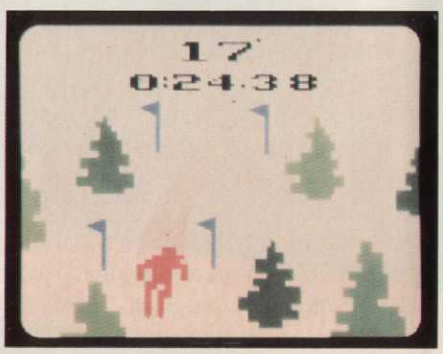
True, this is a complicated tennis simulation, but it's truly an amazing video representation of the sport and well worth the time and effort needed for proficiency.

SKIING

ACTIVISION SKIING

Activision Skiing is one of the best cartridges ever made for the Atari VCS, with graphics comparable to Intellivision U.S. Ski Team Skiing and, along with the less complex and more responsive Atari joystickes, a game that comes very close to emulating the joy of actually being out there on the slopes.

The game gives you a choice between a downhill course, where you must negotiate the run's natural obstacles (trees and moguls) as quickly as possible to reach the bottom, or a slolem course,

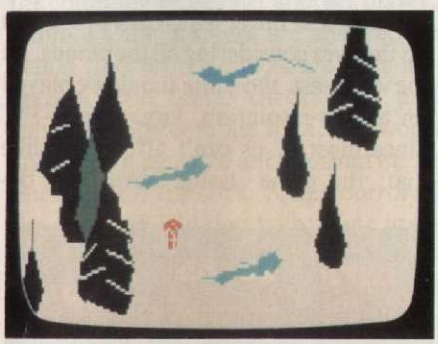


where you have to traverse a series of gates. There are 10 different game selections here: five slolem, each increasing in difficulty, and five downhill, doing likewise.

The idea, of course, in both slalom and downhill is to make it down the course as quickly as possible. Each time you hit an obstacle or gate, the skier falls and you lose time. The time is noted at the top of the screen, along with the meters left to cover. The *a* and *b* difficulty switches are utilized in the downhill course. On *a*, you must jump moguls by pressing the red button and timing your jumps; on *b* you jump automatically. As in real skiing, speed depends upon how far downhill your skis are pointing, but it's best to temper speed with accuracy for your best times.

This is a marvelous game, which gives the joystick skier everything encountered in real skiing except the cold, lift lines and thrill of risking life and limb.

INTELLIVISION U.S. SKI TEAM SKIING



Intellivision U.S. Ski Team Skiing also gives the armchair hotdogger a terrific video representation of the sport. It provides components not found in the Activision game; you can chose how steep the course will be plus another button lets you turn tighter. You can ski against as many as six other skiers here, and you receive the cheers of adoring fans when you finish a run.

The object of this game is to finish the downhill or slalom course within the shortest time. In this game, both courses have gates to pass through but, in the slalom, the gates are closer together. You also get three heats in which to record your best time. At the end of each heat, the clock at the bottom displays your time.

You control the skier with the disk, but you also have a jump button for moguls and an edge button for tighter turns. Speed and fluidity of motion are the keys to good times. Try to get your skier's ski tips pointing as far downhill as you can without losing control. Make your turns smoothly by familiarizing yourself with the course, using a light touch on the disk. Time your jumps carefully and make every gate, because you lose five seconds for each one you miss.

This game employs excellent video representations of white mountains, blue skies, colored gates and a realistic finish line. The sound effects, too, are superb. You can hear the swoosh of the skis as you traverse the course along with the thud of a fall and crack of collision with a tree. The disk controller takes some getting used to, but it is only as good as you are in the final analysis.

BOWLING

INTELLIVISION BOWLING

With this effort, bowling fans are going to strike it rich since Mattel has spared no details in bringing some faithful action to the television screen. Offering a split image of the pins at top, along with a frame-by-frame score, there's a side view of the bowler and the need for a great deal of practice in mastering the lanes. For one to four players, the game begins with the selection of alley slickness, ball weight and left- or right-handed play. The hand-controlled key pad assists in this selection, leading up to the competition when the side buttons and disk take over.

Briefly, the bowler onscreen stands at the base of the lane and the ball comes to him via a press of the disk. Then it's time to decide how you want to line up your bowler, who's controlled by the left-side buttons. At the right, the top button on the hand control is for adding loft to the ball at the point when it's released, while the lower button is for aiming your shot.

A white cursor at the bottom of the screen will move once you press the button. Your challenge is to line up the spot you think will be best, let go of the button and hope that you've timed it right in going after strikes or spares. Another consideration, however, is the type of ball you want to throw, whether it's a curve, back-up or any variation thereof. This is where the disk comes in, with different spots along the outer rim resulting in a very realistic array of options.

The problem, if it is one, with Intellivision Bowling is that you'll need to practice in order to get used to the timing and placement of the bowler for a shot at getting high scores on a consistent basis. Besides regulation bowling, there's also the option of just shooting for spares, which can sharpen your aim. But don't think you're ready for the professional tour until you've gotten it down to a science.

GOLF

INTELLIVISION PGA GOLF

Even though I've never played actual golf and feel viewing it on TV is an excruciating endeavor akin to watching paint dry, I found myself hopelessly addicted to this thoroughly enjoyable video re-creation.

The nine-hole course is well-represented, with fairways, yellow bunkers, dark green trees and blue water hazards. The controls are simple and functional (for a change): You select the club on the key pad, then line up the direction you wish to send the ball by directing the aiming bar surrounding it with your control disk. Side buttons determine the length of your swing, long to short. Since the disk controller provides only 16 directions, you can hook and slice by hitting the side button another time while you swing. Whether the ball hooks, slices or goes straight depends

upon when you hit the button.

When negotiating a hole, remember the irons are more reliable than the woods, but the woods *will* send the ball farther. Always hit the buttons twice, or the computer will send the ball on an unpredictable trajectory. Don't send your ball when driving in the direction of trees, and take your time lining up the ball when putting. (This is a slow, relaxing game, so don't rush!)

The instruction booklet is loaded with additional tips, so experiment with the advice given; in any event you'll find that as you play this absorbing and colorful game, your score will improve. I especially like the split-image screen, with golfers in the right corner.

BOXING

INTELLIVISION BOXING

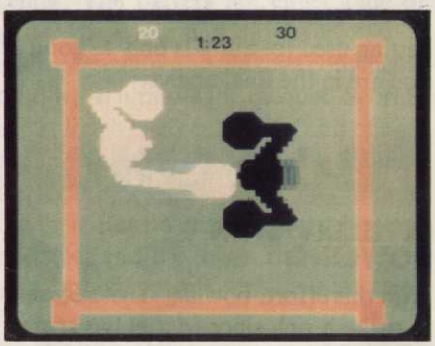
Intellivision Boxing is a challenging and complex game that requires a great deal of skill and a little bit of luck for any degree of proficiency. It does, however, boast that most laudable of video game qualities: difficult to master but easy to learn. You may get the hang of it but never the best of it. The choices you make at the onset of this two-player game are of paramount importance.

Before the action begins, each player must choose the kind of boxer he wants. Six fighters are available: a defensive fighter, an offensive fighter, a fighter that has an equal balance of offense and defense, an endurance fighter and one whose best qualities are unpredictable. (After playing a while you'll soon discover that you'll win most often with the endurance fighter.) The fight can last 15 rounds, but with all the punching that goes on it rarely does.

This game has exceptional color, sound and graphics plus a ringside view of the action. The attention to detail is terrific: The ring and fighters are colorful and well-drawn, and the sound effects accompanying the action are wonderfully realistic. I especially like the dramatic knockdown, where the figure on the receiving end falls to the canvas as his opponent raises his hands in victory, and the sound of chirping signifies the knockout.

The controls take some getting used to, because you have to press so many different buttons and constantly flash your eyes from the controls to the screen.

ACTIVISION BOXING



Activision's Boxing is a good, rousing game in which you can either play against another opponent or the computer. Just like real boxing, it requires speed, strategy and stamina. You maneuver the boxers in eight directions with the joystick; punches are thrown by pressing the red fire button. The computer will always choose the proper hand for a particular punch, but when you hold down the button, you can throw combinations.

However, unlike real boxing, each round is only two minutes long. With every long jab you connect with, you're awarded one point — two points when you connect from close in. If you score 100 points in one round, you're awarded a knockout, signalled by a ringing bell and a KO flashing on the screen. As in real boxing, try to dish out more than you take. After a successful shot, back off and move around until you see another opening; your opponent will automatically back away when hit, so try to get him against the ropes where his maneuverability is limited. Then, you can go in for the kill using combinations of lefts and rights.When you're on the defensive try to get your opponent to hit your gloves, rather than your head: Split-second movement is the key to success. Unlike the Intellivision game, your vantage point is an overhead view of the action, but the sound effects are good in this action-packed game.

HOCKEY

INTELLIVISION N.H.L. HOCKEY

Real-life hockey is a fast-moving, fast-paced, aggressive sport. For it to succeed as a video game, some of these traits must be captured by its electronic surrogates. Unfortunately, neither Mattel nor Activision has succeeded in performing this hat trick in a video game.

Mattel Intellivision N.H.L. Hockey has colorful graphics that make quite an impressive show, including a sharply detailed, multicolored hockey rink. Just as in the real sport, a team consists of five men and a goalie, and there are penalties during play. All of this makes this game appear at first to be a realistic rendition of the sport, but it requires more luck than skill.

To begin, the cartridge displays the entire rink at once, which can be a strain on the eyes considering all the details. At the very least, the game should be played on a high-resolution, large-screen TV. Since most of us can't afford sets like that, the game should have been designed with a scrolling screen, showing only that part of the field the puck is in. As far as actual play, scoring is extremely difficult and frustrating.

Not only is it very hard to maneuver the player with the puck, it's also tough to determine where the other players are heading. Passing is nearly impossible. If scoring wasn't hard enough considering these limitations, since the computer controls the goalie with machine-like precision and the net is very small compared to the goalie's size, there's very little chance you'll ever score big. And without scoring, there's very little gra-

tification—which is why we play sports at all.

The sound effects for this game are marginal. Occasionally, you hear a shot that does sound like wood on rubber, but the fan applause at the beginning isn't heard during play. This game may appeal to the diehard hockey fan who doesn't mind viewing the action from the upper decks.

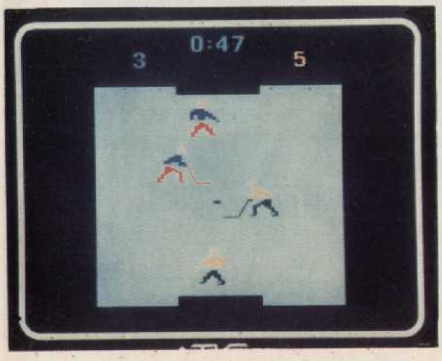
ACTIVISION HOCKEY

Activision Hockey is a simplified version of the game that's short on frills but long on action. You're in control of a two-man team of goalie and forward; you view the action from above and behind one of the goals. Although there's no video representation of a rink, the four players are very well-drawn and colorful. Controlling your team is simple: only one member at a time, depending upon puck location. When you're on the attack, your forward is controlled by your joystick; when you're on the defense, it manipulates your goalie.

This game can be played alone against the computer or against another player. Although the graphics are austere, the action and sound effects are very authentic: You skate, check, steal and shoot with appropriate sounds of wood and metal against ice and the thud of the puck against the stick. Stick control of the puck is a skill that takes some practice, as the puck automatically slides up and down your stick as you skate. When you press the red button and shoot, the puck travels based on stick position.

The cartridge provides four games: two for playing against the computer, two for playing against another player. The differences among them are that games three and four are high-speed versions of games one and two.

This game is another well-conceived offering in Activision's highly successful series of spectator sports translated for the video-game arena.

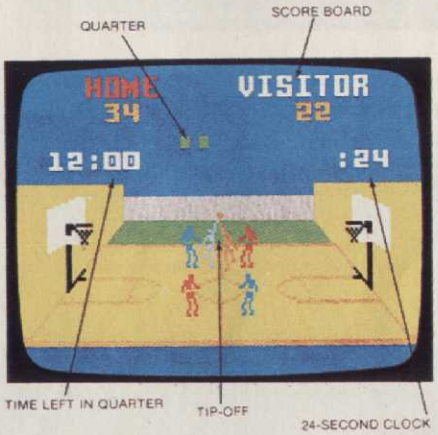


BASKET-BALL

INTELLIVISION N.B.A. BASKETBALL

Intellivision's N.B.A. Basketball is an ingenious re-creation of the sport with excellent color, graphics and sound effects.

Teams are abbreviated to three men on a side, but the court is well-represented with colorful lines and large, white backboards with netted baskets. The players, themselves, are wonderfully agile, as they dribble, block and shoot with amazing grace. This is a two-player game: You control the man with the ball, who turns a darker shade while the computer controls his teammates. The game can be played from one of four speeds; the authentic-looking court keeps score, time and even includes a 24-second clock. The game play (for the most part) is incredibly realistic: You can dribble,



pass, set up screens, block and choose between taking set or jump shots. The one criticism I have with this almost-perfect game is that the colors of the control players are overly similar, so it's hard to differentiate between the main defensive and offensive players. (Intellivision should have made the difference more distinct than having one player black and the other dark gray.) It's a good idea to begin play on the slower levels to familiarize yourself with the controls, but do try to move up to the pro-level quickly, since the action is nonstop and the play very exciting.

An update of this game should consider the three-point shot, for, as in real basketball, the further you are from the basket, the less likely you are of making your shot. ▲

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Eight is Enough: A Selection of the Summer Games

By Perry Greenberg

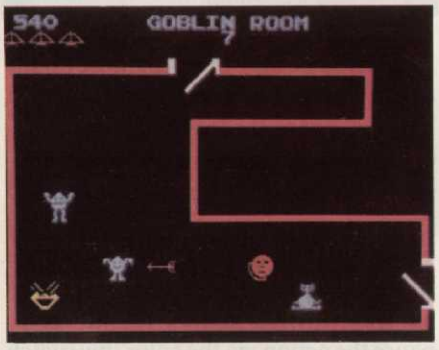
From the standpoint of the home video game player who keeps more abreast of the games themselves rather than the financial reports in the papers, the industry looks as healthy as ever. Owners of the 2600 and 5200 will find games galore lining the shelves this summer, while Intellivision owners will have still more voice-enhanced efforts coming their way. In addition, ColecoVision continues to astound its owners with play and graphics that a few years ago would have seemed impossible to attain in a home game.

What all this means is that, despite the call of summer sports outdoors, game players can still find plenty of action inside. Just pull up a chair and sit yourself by a tall glass of iced tea, open the window a crack and get ready to be transported—to Smurfland, a carrot patch or the garden where Centipedes breed aplenty.

Venture (Coleco)

Venture has been converted into two home versions by Coleco: one for the company's own system, the other for the Atari VCS. *VIDEO GAMES* reported on the VCS version in February's Soft Spot, and found it to be one of the best cartridges around for that system. The rendition for the more sophisticated ColecoVision is far superior graphically; however, not as responsive as the VCS to the joystick's command.

Winky, the arrow-shooting hero of the game, has the job of venturing about a multi-screen playing field where he must retrieve treasures from monster-infested chambers. The player must guide Winky (who appears as a dot here) along a hallway connecting chambers, all the while avoiding contact with hall



creatures. Guide Winky through the doorway of a chamber and a new screen emerges where Winky appears as a round, smiling, arrow-shooting being who must abscond with the chamber treasures while avoiding or shooting the different creatures guarding it. There is a limited amount of time to spend in any one chamber before an indestructible hall monster appears and makes a beeline to Winky. Even though the game's graphics are more detailed on the Coleco version, Winky moves far less responsively here. In fact it's downright frustrating to make Winky move and shoot in the direction you want. Whether this was an intentional move to make the game more challenging or an inherent defect in the system, is up for debate. But, either way, you'll want to pull the hair out of your head for all the errant moves and wasted lives due to the lack of response. Still, Venture is a terrific game with more screens and villains to contend with than a half-dozen other games put together. So, with a bit of practice and a great deal of patience, Venture should serve you well.

Some tips to get through the early stages of the game: In the first level, one of the chambers has movable, electrified walls protecting the treasure. The space you must squeeze through, between the harmless stationary wall and the electrified ones, is much larger on the top and bottom walls then the sides. Therefore, approach and exit via the top and botton walls. When entering the serpent room, always enter through the left door. If you enter through the door on the right you'll be right on top of the snakes and you won't have a chance. Also, if you're leaving a room and there is still a living monster to deal with, station yourself by an exit and wait until he comes in range. This way, even if a hall monster appears, you'll still have time to exit safely.

Turmoil (20th Century Fox Video Games)

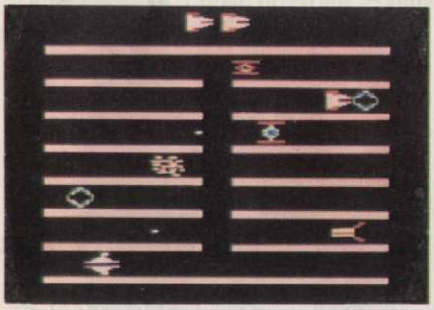
Turmoil is an elementary shoot-em-up where eye/hand coordination is tested by moving a rapid-firing ship up and down a corridor in the center of the screen. Flanking the ship's corridor are rows through which a host of objects zip by. The object of the game is to rack up points by shooting anything that moves while avoiding fatal collisions. A variation on the theme are tank-like objects that can be repelled when hit from the front and destroyed when hit from behind. In addition, pulsating, donut-shaped objects frequently appear and when they do, you can enter that row and dock with it for a bonus of 800 points. But be quick! If you wait too long, it turns into a lightning fast projectile that will destroy your ship on contact. If you dally too long after docking, a slow but indestructible saucer appears in that row. You must exit the row before it gets inside, or your ship is doomed.

There are nine levels of play, each one

tougher than the previous. You can start off on level one and progress to the tougher levels or you can program the game to start at any level with the select switch. There are no two-player modes.

This game is a relentless test of constant but controlled movement, and rapid firing. You should dock with the pulsating object whenever possible and make a hasty retreat. It's also advisable to keep an eye on slow-moving objects since they are the ones you'll collide with most often as they conflict with the tempo of this very fast-paced game.

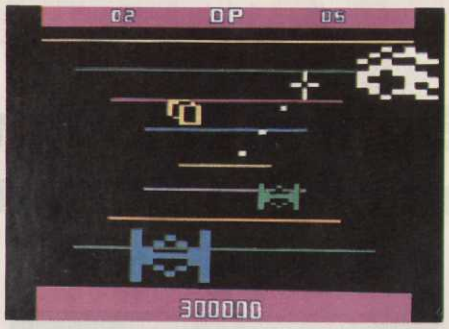
Turmoil has good, colorful graphics and lively sound effects. The rapid-fire feature works well and the collage of moving colors that surround the number indicating you're proceeding to the next round is a nice touch. But, all in all, this game is a monotonous and fatiguing test of reflexes. It's fast moving, for sure, but at this stage of the game most players will expect more from a cart than dodge-and-shoot and in Turmoil you don't get much more.



Nexar (Spectravision)

A 3-D variation of the dodge-and-shoot game made for the VCS, **Nexar** utilizes the joystick to control a cursor (representing your ship) all over the playing field. From the center of a vortex come saucers and beacons that attack you in a 3-D perspective. The player has five ships and 99 seconds in which to destroy *all* the beacons plus as many enemy ships as he can within that time frame. The amount of ships you have, as well as time elapse, and the number of beacons you must destroy, is shown on the bottom of the screen. If you fail to eliminate all the beacons noted at the bottom, you lose a ship. When you've exhausted your supply of ships, the game is over.

No matter where your cursor is on the screen, your line of rapid fire is automatically directed to the center. Therefore, the best course of action is to line up your cursor so your line of fire intercepts the greater percentage of enemy objects. It's best to fire from the perimeter of the playing field since this will give you a better chance to dodge enemy craft and to avoid the deadly debris left after a successful kill. Go after the



beacons since they're worth more points and failure to destroy enough of them in a round means the loss of a ship.

Nexar is an elementary dodge-and-shoot game, with good colorful 3-D graphics, employing some interesting variations (among them a highly mobile firing cursor, a time element and, as in all Spectravision games, the ability to pause the action via the color/bw switch on the VCS). But, for the most part, the action is very repetitive. There are three game selections, but the first and third seem to be identical. This game would have benefited enormously with the addition of a two-player variation. At least with the added incentive of head-to-head competition the game would lose some of its redundency. Nexar, at best, can pass for momentary diversion from heavier video game fare. It's an enjoyable light snack on the ever-expanding video game menu, but as a full course meal, it leaves you hungry for a great deal more.

Smurf Rescue in Gargamel's Castle (Coleco)

The ubiquitious, oppressively cute cartoon characters come to the home video game scene with such remarkable fidelity to its their Saturday morning origins you'll be asking yourself, "Is it Smurf or is it ColecoVision?" But aside from the astounding graphics the game play is pretty good.

Smurf Rescue is a Donkey Kong-derivitive in which you guide a joystick-controlled Smurf along a horizontal scrolling trail that eventually leads to Gargamel's evil castle, where you reach the kidnapped Smurfette and effect her rescue. As in most Coleco games there are four levels here. The action involves having your Smurf jump and duck over fences, hills, spiked grass and stalagmites. To jump you move the joystick forward; to duck move it back towards you. Unlike Donkey Kong you do not use the red button. The idea of the game is to time your jumps over stationary obstacles to accumulate points; the small obstacles are worth 200 points; the larger ones, 300. You also encounter malevolent bats and crows. Making contact with either one of these evil creatures is fatal. They can be avoided by either jumping or ducking over them as they attack. If you're really quick, move past them as they zero in. No points are awarded for successful evasions.

Timing your jumps is the key, and since the objects are stationary the best place to jump is at a spot near the hurdle. For high jumps over 300-point obstacles jump twice. First jump in place then jump again. Invariably the second jump hurls you over the taller objects. Finally, when you arrive at the creepy castle, spiders will descend from webs on the wall. Avoid them by waiting until they touch the ground, then just hurdle over them. I've yet to lose a Smurf to a spider using this technique.

Once you've successfully completed the journey you repeat it and attempt to increase your score. Completion, which is accomplished by reaching the captured Smurfette, is worth an additional 10,000 points. So the game goes until you run out of Smurfs. I would have preferred that the game move you to the

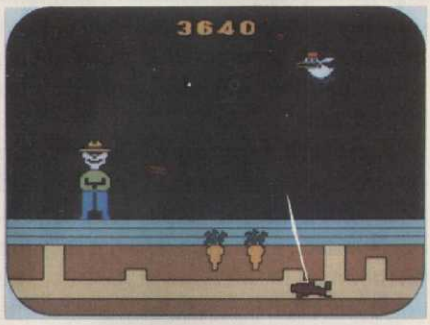
next harder level when you've completed an easy one, but you stay at the same level until you reprogram the cartridge in the next game.

Even if you are not a fan of these blue munchkins, Smurf Rescue is a challenging and exciting game with superb

graphics that complement the growing library of carts for this superb system.

Gopher (U.S. Games)

Gopher is a down-to-earth, monotonous little game with very cute cartoon-like graphics. The player controls a farmer who must protect his carrot patch from ravenous, spiteful, crafty



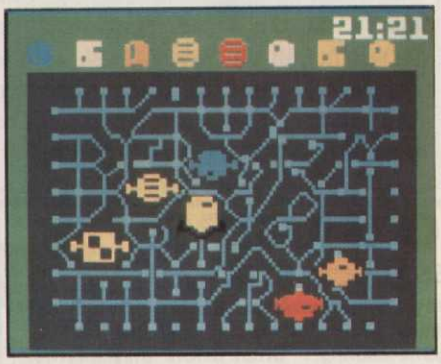
and taunting gophers bent on eating the three-carrot crop. The farmer, armed with a shovel, must close up the burrows the gophers dig which provide them with access to the carrots. The red button controls the farmer's shovel. Press down and the farmer pumps the shovel up and down sealing the burrow. If one of the larcenous rodents sticks his head up while the farmer's sealing the burrow bonk him for extra points. The game can be prolonged by catching seeds dropped by a duck that passes overhead from time to time and planting them in the spot where a stolen carrot stood and a new carrot will grow in its place. This VCS game is very difficult to score high on because the farmer doesn't move very fast and he has a great deal of gound to cover. The gophers are only vulnerable for a split second when they emerge from a completed burrow. They're untouchable underground or once they leave the burrow and make a run for a carrot. It's best to seal every burrow completely. This will give you more time and a higher score since the gopher must start digging it from scratch. Protecting the carrots has priority over catching seeds. Don't go for a seed at the risk of a carrot.

This game is awfully cute and may be ideal for young children. But for the serious video game player it's really a silly game with very little going on except moving the farmer back and forth until the gophers ultimately consume the carrots. In other words, kids may dig this game but the older set may not go for Gopher.

Bomb Squad (Mattel)

No one could ever accuse Intellivision of making games that are too simplistic in design and concept. In fact, it can take a good hour to figure out the cryptic instruction book for the latest addition to its line of talking games. **Bomb Squad** isn't for the conventional, inveterate video game player. This isn't one of those games you plug in and you're off and running. This is a thoughtful, ingenious game for only the most patient and meticulous of players.

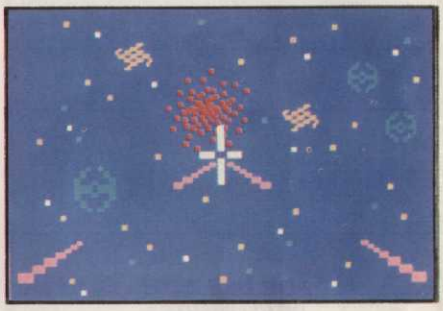
Boris, a terrorist of obvious origins, has planted a bomb that will soon go off leveling the city. It's up to you and Frank, the bomb defuse expert, to neutralize it before you and the city are just a fond memory. Frank, the computer voice, who being smart enough to know how to defuse the thing, also has the good sense to be a safe distance away, so it's up to you to follow his instructions in this multi-screen game. You're given a time limit in which to complete the job, which consists of replacing components of various circuit boards with an assortment of video tools, that reveal portions of a numbered code. When enough segments of the code are visible, you have the option of guessing the number. A correct guess will foil Boris and the screen depicting the city will flash on with fireworks erupting in the sky. A wrong guess, or failure to do so within the alloted time, will result in a view of the crumbling city accompanied by an explosion.



This game may be a great training exercise for anyone planning to go into this line of work, but it's downright tedious and laborious to go through all this work to defuse an imaginary bomb. Frank's voice is astonishingly clear and he does get emotional, lifting your spirits with congratulatory intonations when you've successfully replaced a component. This game deserves high marks for sophistication of play, graphics and sound, even though you do begin to get annoyed by the incessant ticking of the bomb and Boris' goading. But defusing bombs, imaginary or otherwise, may not be everyone's idea of a good time.

Space Spartans (Mattel)

A first-person Star Raiders-type game, **Space Spartans** has the added component of being able to talk to the player. Unlike Odyssey's voice-enhanced games, where the computer's



speech is merely ornamental, Mattel's voice enhancement is an integral part of play.

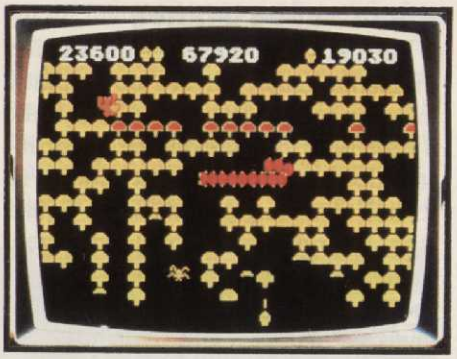
In this game the action is principally the same as in other first-person space-war games. You have to protect your space stations from alien attack in different parts of the galaxy represented on a grid map. Once you've decided which area of the map you'll battle in, you warp there and begin the conflict. The difference here is that you no longer have to read the cryptic notations at the bottom of your screen, as you do in Star Raiders, to determine the condition of your ship. Computer voices that speak with incredible clarity are at your disposal reporting the condition of your ship and warning you of attack on stations in other parts of the galaxy. You can effect repairs while doing battle or, to expedite major mending, warp back to one of your space stations. Continuing to battle in damaged condition can result in the loss of your ship and the end of the game, which is noted by your computer's voice saying forlornly "The battle is over."

This game is without a doubt the most sophisticated space game I've ever played. My major gripe is that the battle is very slow. Your ship isn't very maneuverable and it's difficult and frustrating to dodge enemy fire. You can't help but admire the sophistication

of Space Spartans, but, for a rousing first-person space battle, it's par-secs behind my favorite of this genre, Star Voyager by Imagic.

Centipede (Atari)

Atari's **Centipede** for the 5200 is a remarkable achievement. The graphics are superb and all the characters and game variations that make the arcade game such a thrill (spiders, scorpions, poison mushrooms and fleas) are here in faithful rendering. Since the arcade version employs a screen that is taller than it is wide the game play is impeded on normal television screens that have the opposite configuration. On a 25-inch screen this distortion is compensated by the size of the set, but on smaller home sets the differences become apparent. Because the action involves a host of antagonists descending from above, the distances between you and your foes decrease appreciably. The fleas, for instance, drop like lead balloons and it's almost impossible to get off two shots to destroy them. In fact your best defense is to dodge them. The joystick controllers which do not spring back to center and are equipped with an uncomfortable fire button make it much harder to line up your targets than with the trackball, especially when going after spiders.



With spiders the difference in distances is very conspicous, since the score for a spider kill depends on the distance from your shooter. A 300-point kill would be about where a 600-point kill is on the arcade version, a 600-point kill would be about where a 900-point kill is on the arcade game, and a 900-point kill on this home version is quite a feat since the distance between you and the spider at that point can't be seen with the naked eye.

The same strategies that are applied to the arcade version should be applied here. Keep your shooter low and in the center of the screen. Don't chase spiders, but try to destroy them as they leap up. Always aim for the head of the Centipede and try making narrow corridors of the mushrooms where you can trap the creature and finish off all the segments in rapid succession. Also, clear out the mushrooms on the bottom because they become lethal impediments when battling the Centipede in this critical zone.

These techniques are easier said than done with the cumbersome joystick, and your scores on the home version probably will be a fraction of what they are on the arcade game. But, take heart. The Atari trackball is on the way and for the day when there's a projection TV in every home, Centipede will soon surpass the arcade version. In fact, there are features of the home version that are not found in the arcade game, such as pausing the action and a choice between hard, easy and standard play. As in the arcade Centipede there are one- and two-player modes to choose from. ▲

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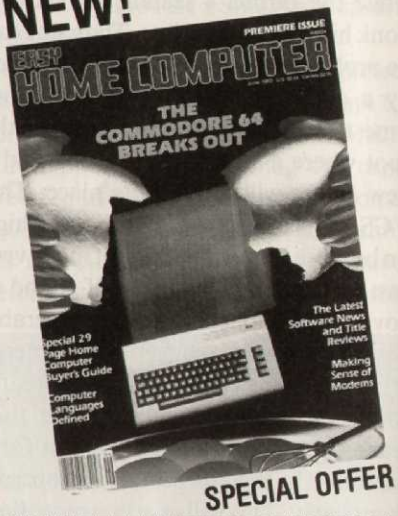

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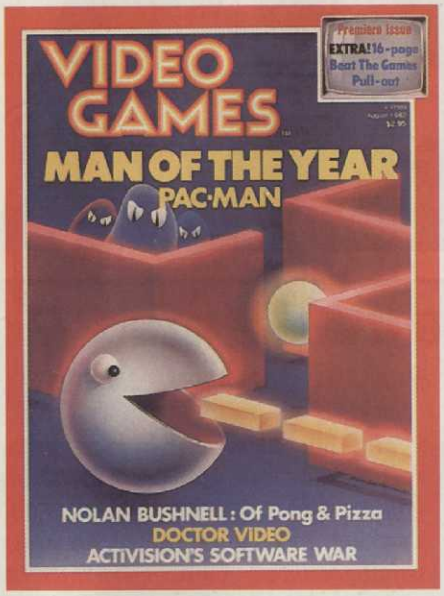

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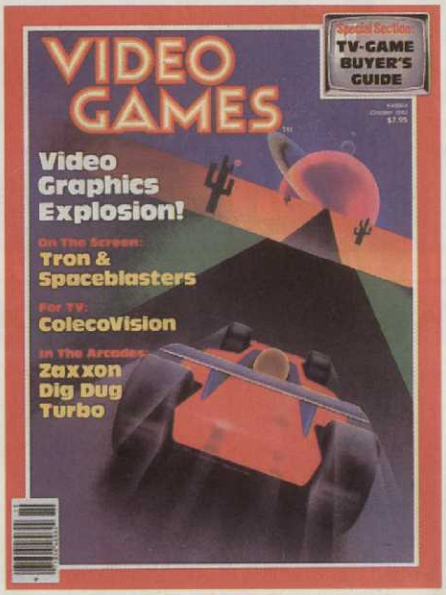

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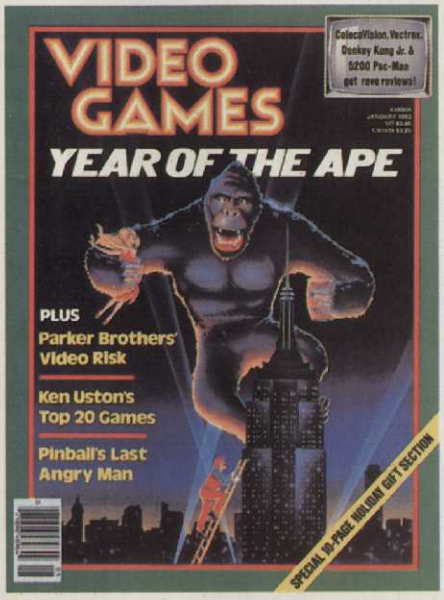

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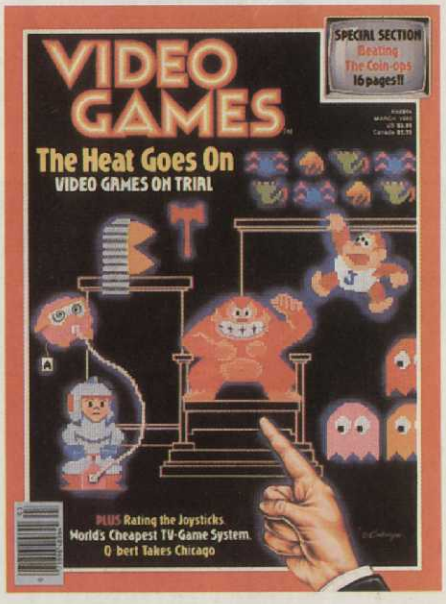

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COIN-OP SHOP

Sampling the Newest Arcade Games

By John Holmstrom

As the months pass, the one thing that seems apparent is that the coin-op industry is still in a state of flux and transition. With no clear-cut winners ruling the roost, although the strong showings of Pole Position, Q*Bert, Time Pilot, Millipede and even the pin/vid Baby Pac-Man have seemingly proved their popularity and appeal since their introduction in the late fall, the prevailing mood continues to indicate that almost anything goes—and usually will, if a manufacturer thinks there's a market for it.

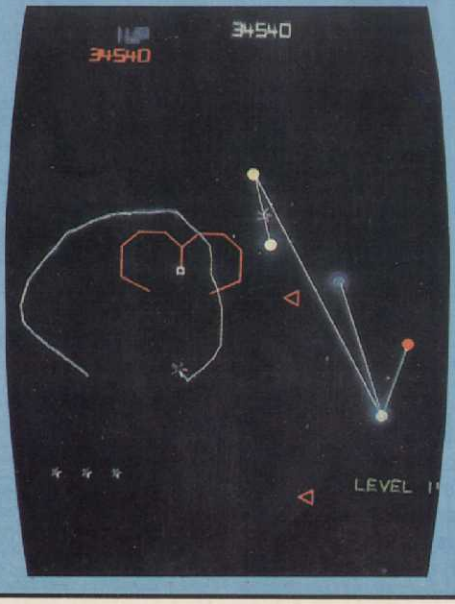
Interestingly, the major developments, which ordinarily occur during the course of a year, have begun to solidify around two conventions that serve as showcases for new endeavors and trial efforts. Long the standard of the industry has been the fall/winter AMOA (Amusement & Music Operators Association) extravaganza staged annually in Chicago. A recent addition to the scene has been the AOE (Amusement Operators Expo), which in four short years has established itself as a spring time display of coin-op wares, where the unexpected has become the expected.

This time around should prove no exception, and next issue we'll be giving you a closer look at the highlights and machines to keep an eye out for in the coming months. Until then, there remains some interesting games that have made their appearance in recent weeks and might be the leaders before summer runs its course. Together they provide a mixed bag of designs and themes, while separately, they offer some clues as to the possible directions of their given companies. But it will ultimately be you, the players, who will decide their fates in the game rooms and arcades.

Atari's

Drawing games will never replace shooting games but they might better endure. Aside from home cartridges offering electronic doodling, Taito's Qix was the first drawing video, relying on an etch-a-sketch concept and some interesting game-play concepts. Now comes Atari's Quantum, which is a little more ambitious, but not nearly as interesting.

Incorporating the company's now classic trackball to control an electronic probe, Quantum features five levels of difficulty (1, 3, 5, 7 or 9) to choose from. Once the game begins, players have to circle a variety of geometric shapes on the screen worth anywhere from 20 to 400 points without coming into contact with any of them. Extra point values are awarded if more than one object is circled at the same time and bonuses are awarded in a manner similar to Tempest, which this game most closely approximates in "feel."



A "nuclear" atmosphere is injected into the subatomic world since the shapes include a Nucleus, triangular Photons, Electrons, self-dividing splitters, Positrons, diamond-shaped Triphons and Pulsars. As the game progresses, the numbers of nuclei, bonds and enemies increase, along with the speed of all the objects in general.

Although it's a true test of trackball skill, Quantum is not much else. There's just not enough to hold a casual gameplayer's interest unless circling little shapes is the challenge one is looking for from video today. The graphics are dull, and the sound effects are mediocre. Given the quality of some of Atari's other games, Quantum will probably get lost in the crowd—deservedly so.

Stern's

BAGMAN

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Owing a debt to Dig Dug and Donkey Kong, Bagman relies on a player's greed, cunning and trickery to win. From Stern, via a license with S.A. Valadon Automation of France, you play an escaped convict traveling through a maze of underground tunnels, mineshafts and railroad tracks, carrying bags of gold up to your wheelbarrow while avoiding two guards. There's a joystick and action button which enable you to control the convict and pick up a gold bag, drop it on a guard's head, use a pick-axe to dig a hole in the ground or to knock out a guard, grab a ceiling beam to avoid detection by the guards or jump into a coal-car and get a free ride, as well as to move the wheelbarrow. That's a lot of action, and the number of play options makes the game a test of skill and brains, rather than reflexes and peripheral vision.

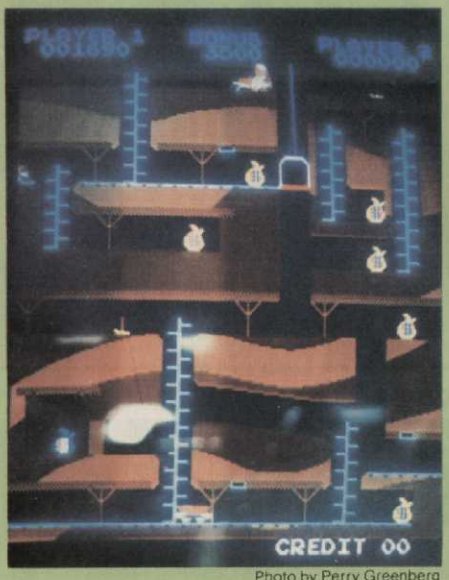


Photo by Perry Greenberg

There are several variables to Bagman, with the playing area divided into three separate screens, so that when you exit one of them stage left, you'll instantly appear at the adjacent screen stage right. This must have been a big laugh for the game's designer, especially when unsuspecting players leave the second screen on the right side, blindly enter the third screen and fall down a mineshaft to their death.

Besides always being aware of where you are in the scheme of things, there's a bonus timer to contend with. It starts out at 4,000 points and quickly counts down. Every time the Bagman deposits a gold bag into the wheelbarrow, it returns to 4,000 points, but let it reach 0 and you're dead. The bags are quite heavy, so when the Bagman carries one, his speed is decreased, making it easier for the guards to catch up (which they do remarkably well). There's also a bonus bag locked up in a cave in the second screen which is twice as heavy as the others and, therefore, twice as much trouble to drag to the wheelbarrow, but it's definitely worth the trouble as long as the bonus timer is as close to 4,000 as you can get it.

Stern's Bagman is a maddeningly addictive game that contains enough humor and a strange enough premise to attract an audience. It's also a simple enough challenge to trick you into playing it one more time, because you're sure you can "beat" it. There are some problems, however, beginning with the joystick that's a little difficult to maneuver. The game's slow, deliberate pace can also be frustrating. Finally, the action button will work only if you're exactly in the right place and, if you leave a pick-axe below a ceiling beam, beware! If you push the button to grab the ceiling beam and avoid an oncoming coal-car, the stupid Bagman will grab the pick-axe instead, and get crushed by the car. The pick will knock out only one guard, then disappear, so if you're being chased by both of them at once, forget it (unless you use the pick-axe while driving in a coal-car, which will dispatch both of them to destinations unknown). All in all, control problems aside, Bagman's a fun game that's involving and cerebral. There's even a comic strip on the cabinet explaining the action in a simple and effective manner.

Rock Ola's

NIBBLER

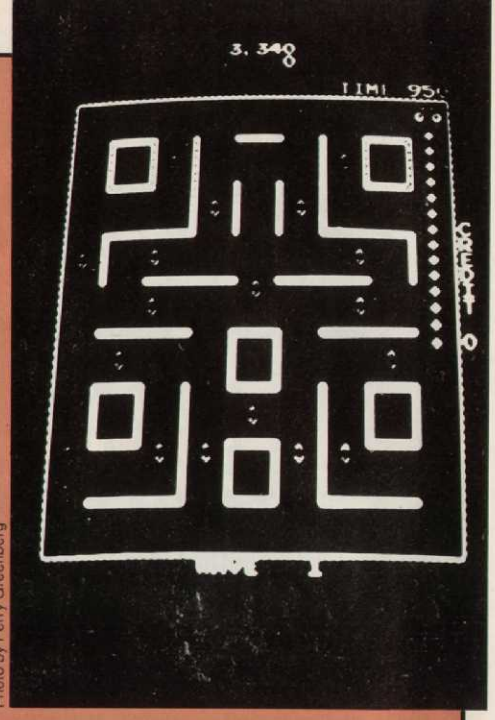


Photo by Perry Greenberg

Here's a model from Rock-Ola, long known for their jukeboxes and an entrant into video within the past two years, you might have missed in the recent flood of sequel games. Nibbler is simple and so basic it's almost a puzzle instead of a video game. However, it's also an interesting variation because of the minimalist approach to its typical maze-theme design. Although it looks like an easy game to play, only the controls are simple. A directional joystick guides a snake through various mazes. The snake has to pick up, or nibble, little pieces of "food" along the way to complete the maze. The real challenge comes into play as the snake grows longer for every inch it travels. If the snake runs into itself, it crashes and you start again.

Nibbler adds into play the element of time and if you complete the maze before the clock runs down, you're awarded a bonus. If not, you lose a snake. The slimy reptile is a slippery little devil, too. It slides right around corners, so you have to think ahead. Even when you know the patterns that will solve the different mazes, you must think quickly and execute perfectly in order to keep the game going.

Nibbler reminds me of the video games that populated the arcades a few years ago. It doesn't rely on flashy graphics, an established video game superstar or a character from another medium, just an interesting idea. And if you're looking for a departure from more conventional maze games, Nibbler might just be worth the two bits.

Sega's

STAR TREK™

With a major promotional campaign heralding its release, this isn't just a mere video game, but is being billed as a "Strategic Operations Simulator." As Scotty says, in his familiar brogue before the play begins, "You are the captain of the Starship Enterprise." There's also the Star Trek theme which booms out, and Spock saying, "Welcome aboard, Captain." Once the sound show is over, you're plunged into space against the fierce Klingons. Your job is to defend Starbases from their attack, and successfully pilot the Enterprise through more and more difficult and hostile sectors of the galaxy.

The screen is divided into three parts with the upper left-hand portion containing a supplies readout, so at a glance you can see how many shields, photon torpedoes and the amount of warp power you have left. The upper right-hand board is the main scanner screen providing a bird's eye view of the Enterprise, enemy positions and the location of the Starbases. Below is the Forward Targeting Scanner, which shows off a striking vector graphic of the aliens you're blowing up or the Starbases you're docking with from a first person perspective.

There are five controls which need to be mastered, including a knob (similar to the one on Tempest) for directing the course of the ship, a fire button (which shoots limited range phasers), a thrust button for forward motion at slow speed, a photon button that fires torpedoes capable of wiping out large portions of the galaxy and a warp button that allows forward motion at super-speed. The photon and warp buttons are placed at an awkward position which may take some time to get used to, but aside from that the game works well. In fact, it's one of the best vector games in years, as well as a successful simulation

Atari's

XEVIOUS

Before you drop in your first quarter, the quality of this game will be apparent. The cabinet is wider than average and the screen, protected by a thick pane of glass, is placed at an angle that affords players a better view of the action. Meanwhile, if you've ever had to deal with the glare of overhead lights at your favorite games rooms, here's a model where the top of the cabinet has been built in such a way that you'll never have to worry about catching all the action on screen. And if these touches weren't enough to at least get your attention, the game play of Xevious will. A very classy science-fiction shooting game on the order of Defender, Galaga, Robotron, Space Invaders and Asteroids, it breaks new ground while providing a very familiar theme and set-up.

Another licensed effort from Namco, Atari has seemingly struck it right with this relationship, given the fact that Xevious follows on the heels of that runaway success, Pole Position. And this time around the graphics are just as strong. Your ship, called a Solvalou, flies over a very realistic landscape, shooting flying aliens with a zapper button and bombing ground enemies with a blaster button that's enhanced by the visual addition of target crosshairs a few inches in front of your ship. There are 14 different sky enemies (with odd names such as Brag Zakato, Terrazi and Giddo Spario) and 11 different ground targets (with even stranger names, including Garu Barra, Domogram rover and Boza Logram), most of which are capable of returning fire. The smaller airships seem to be made out of glass, shattering when you blow them up and breaking into tiny crystals. As for the ground targets, they explode in a fiery inferno when destroyed, leaving smoldering craters behind. The Barola are indestructible resistor shields which rotate toward your ship and can destroy it on impact. A sight to behold, everything is drawn in a very realistic style, with close attention paid to small details.

The scoring ranges from 30 points for a Toroid ship to 5,000 points for the Andora Genesis—the mother ship, which is the single most spectacular spaceship I've ever seen in a video game. The controls are excellent, with the joystick being very responsive in maneuvering the Solvalou over most of the screen. The speed of the game isn't outrageously uncomfortable and the unlimited zapper and blaster weaponry allow for a continuous and steady stream of simultaneous rapid fire. When your ship does get blown up, you start over again at approximately the same place you left off, so you can learn from your last mistake. There are five levels of difficulty the operator can choose for his machine which unleash different waves of alien enemies at strategic parts of the game. But not to worry: You'll get your money's worth from playing Atari's Xevious no matter what the setting is.

of the powers and perils of piloting the Enterprise against the Klingon Empire. The only thing missing is Scotty screaming "I tell ya, captain, she just canna do it!" and Spock musing "Highly illogical" when you do something stupid.

With only one ship to command—if it gets blown up that's the game—Star Trek, at first, might seem to be a ripoff, but it isn't. You're given a number of shields and photons to begin with (depending on the generosity of your local game room operator) and the opportunity to pick up more by docking with a Starbase. When your ship is hit, you lose a shield instead of a ship. Once you're out of shields, the Klingons use up your photons, and finally go to work on your warp power. Run out of supplies and power and the simulation is complete.

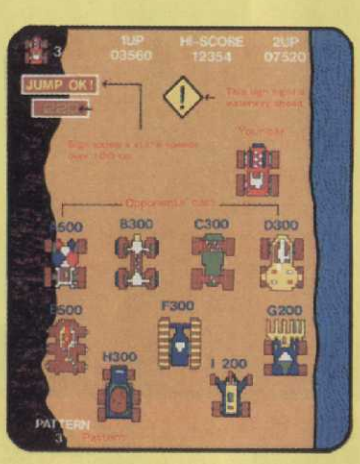
There are six different enemies, including red, purple and white Klingon ships, blue anti-matter saucers and the tricky yellow Nomad during special rounds, which plants dangerous space mines. Together, each enemy attacks different functions of the Enterprise in a dangerous space battle that can take you through 40 different simulation levels and a game that looks like it might be one of the season's big hits.

Bally/Midway's

Bump'n'Jump™

At last, a driving game for sadistic maniacs who enjoy smashing into other cars! Let's face it, there's a great number of driving game enthusiasts who get a secret thrill when their car smashes into another vehicle. It's the same in real life. The popularity of *The Dukes of Hazzard*, Demolition Derbies and amusement park bumper car rides proves that. They all rely on our desire for some anarchy in the most restricted part of our lives—driving. Driving real cars is fun, but there are speed limits, stop lights, police cars and a zillion signs telling us what to do.

Although it doesn't offer the realistic driving perspective of Turbo or Pole Position, Bally/Midway's Bump'n'Jump (a licensed follow-up to Burger Time from Data East) offers the vicarious thrills of just such a driving fantasy. Not only can your car push fellow drivers into the side of the road to their doom, it



can also jump over them or any other trouble spot. Your car follows a road pattern that's occasionally interrupted by waterways. You then whip through a grueling, punishing race, trying to bump as many cars as possible without getting clobbered yourself. A joystick controls the speed and direction of the car, and a jump button enables your car to jump over, land on and explode other cars.

For some visual feedback, a "Jump

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O.K." sign flashes in the upper right-hand corner of the screen when your car is traveling the 100 m.p.h. it needs to be racing at in order to jump. A signal flashes before you approach one of the waterways warning you to prepare to jump. The other cars are worth between 200 and 500 points when they're destroyed and, at the end of a road pattern, you collect an additional bonus for each car you've smashed up.

Although the concept of Bump 'n' Jump is interesting, the game itself isn't. Even with an 8-way joystick, the bumping action is hard to control, and the "Jump O.K." sign is difficult to see while you're driving. As for the roadways with its array of rocks, oil spills, rivers, lakes, barriers and other cars, it's not all that interesting—although there is a nice, if not impossible, touch added to Bump'n'Jump, whereby if you can get through the course while avoiding contact with all the other cars, there's a 50,000 point bonus. But even with the incentive, it just doesn't compare with plowing into the other cars.

Arcade Watch

As the industry braces for a convention which will provide more tangible evidence of design directions most of the current news surrounds the upcoming introduction of video disc games with at least four manufacturers ready to commit themselves to production before the last rays of summer sun fade from view. Also on the horizon is a continued emphasis on expanding the current range of "standard" video game graphics and play action, while attention is also being paid to other concepts updating older arcade attractions such as rifle games and other novelty equipment, including a renewed effort to establish pinball machines and derivatives for today's arcade player.

As for some of the newest models just hitting the streets, which *VG* will be covering in greater depth by next issue, come Mad Planets from Gottlieb, Wacko! from Bally, Sinistar from Williams, Munch Mobile by Centuri, Atari's Food Fight and many, many more ensured to bring hot fun in the summertime. ▲

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THE FLIPSIDE

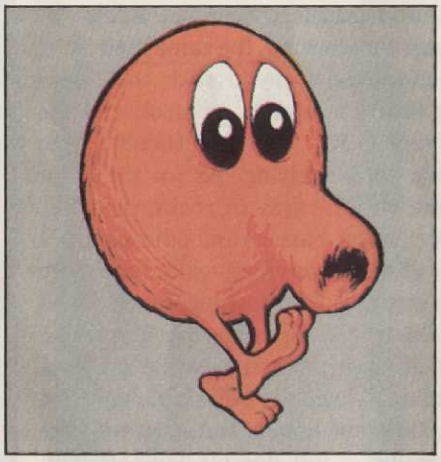
Q*bert Makes the Jump Over to Pinball

By Zelmo

Long recognized for its accomplishments in pinball design and development, Gottlieb has enjoyed substantial success of late with Q*bert, an outstanding video game. But this hasn't diminished the company's belief in the viability of pinball machines. In fact, recent efforts have been marked by some unique playfield and flipper configurations. There was Rocky, with its one-two punch, double-flipper action; and the outlane flipper, multi-level playfield Spirit that hit the arcades over the past year. Add to these Punk and Striker, featuring some innovative, multi-ball play and unconventional flipper action, and it's apparent Gottlieb is more than willing to continue its search for flipper-game designs that will appeal to today's players. Q*bert's Quest is no exception to this rule. This game reprises the cast of zany video characters in a game with a figure-eight playfield layout and a novel setup of lower flippers.

Borrowing heavily on the theme of the original video game, this variation centers around lighting up that familiar pyramid; only now, players must hit cube targets (two sets of two) or go down a lit pyramid roll-over lane. When this is accomplished, a 20,000 point out-hole bonus is added, which can build up to 100,000 points with the completion of five pyramids. At this stage there's also the opportunity to earn a special when the sixth pyramid is finished off.

However, it's not as if obstacles aren't in your way, since Q*bert's Quest also features a trio of villains (Ugg, Wrong Way and Coily) who advance, one at a time, in seven steps to steal cubes from the pyramid. Hitting the target in front of them, or one of six stationary targets in the center of the playfield, will push these adversaries back one step. In order to gain an extra ball, all three have to be stopped, which occurs by either hitting their target as the first step in advancing,



or by completing a long loop shot from the bottom flippers.

Play begins with the ball entering an enclosed area on the upper right side of the game which contains a free-standing roll-over lane that can result in lighting the entire pyramid if it's made off the plunger. Below are two more roll-over lanes which, when lit, will light one block in the pyramid that's at the center of the playfield. After traveling this far, the ball will then roll down to a kicker where it is thrust out into the main part of the board. From this point it's just a matter of timing shots and getting into the rhythm of play.

Q*bert's Quest offers a number of key areas, accessible from either flipper, with a nice, long shot right up the middle to the very top of the board and a target which, when hit, will stop a villain in his tracks. On either side are medium-range targets with the left featuring a captive ball and a continuation sequence via a kicker that shoots out the ball over to the right side. The right incorporates a kicker that serves as the entry of the ball when it is initially put into play. The satisfaction for wizard and novice alike is that these areas can be reached from left to right or right to left as well as wonderful reverses from either flipper.

Where the play really gets interesting is at the bottom of the field with the addition of two extra flippers, facing downward and at opposite angles than is normally the case. These are for the yellow loop lane shots mentioned earlier, where an accurate hit can mean sending the ball on a journey that almost traverses the entire board. There's a bit of skill involved with mastering the control of the four flippers at any given time and the fact that a ball in the area might roll to the top set of the bottom pair depending upon a well-placed nudge and the velocity of the ball.

Although Q*bert's Quest might seem a bit confusing at first glance, with the cross-over flippers and need to press the appropriate side buttons, much of the action is truly controlled by the game itself, with the side kickers doing most of the work. Even with the balance of features from the top on down, there's the potential problem of never feeling in tempo with the play—waiting for the ball to get down to the flippers, only to then quickly shoot it back up. All in all it's not the best of games but it's far from the worst. The company's obvious intent is to try and capitalize on the popularity and recognizability of the video game. Well, that's where the similarity ends as Q*bert's Quest leaves one only mildly satisfied and wanting still more from a pinball machine. ▲

Editor's Note:

This new member of the VIDEO GAMES *family has been involved with the coin-op industry for more than 20 years and is still very active. Because we wanted to ensure that what this individual writes would be as hard-hitting and honest as possible (no matter which manufacturer might be responsible)* VG *is providing total freedom and anonymity so as not to jeopardize this contributor's sensitive position in the industry. Because of this, we have agreed to use the pseudonym "Zelmo."*

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Youth Beat

Hosting a Home Video Game Tournament

By Rawson L. Stovall

What can you do when it's raining buckets outside and there's nothing good on television? Simple. Have a home game tournament. No matter what system you own, you can have loads of fun and make money at the same time. Here's how:

Step one is to buy some prizes. It won't be hard to find small items related to video games such as "how-to-play" paperbacks, Pac-Man pencils, notebooks, score pads, candy bars, etc.

Step two is to choose a game for your tournament. If you find one that is similar to an arcade game, later on the top winners can compete on a full-size game at a local arcade. It doesn't have to be the *exact* game. For example, you could substitute Apollo's Shark Attack for Atari's Pac-Man; Intellivision's Space Armada or Imagic's Demon Attack for Space Invaders. You might want to try out some of the latest home games such as Ms. Pac-Man or Donkey Kong, Jr.

Step three is to decide on refreshments —cookies, candy, popcorn, punch are fine. Hint: Beg your mom to make Pac-Man sugar cookies or do it yourself. They're simple to make. To keep things running smoothly on tournament day, it's a good idea to bake them the day before.

Here's the recipe my mom likes best. It's from Wilton, the company that makes cake decorating products.

Vanilla Sugar Cookies

½ cup butter or margarine
½ cup sugar
2 eggs
1 teaspoon vanilla
2 teaspoons baking powder
2¾ cups flour
Preheat oven to 400°

In a large bowl, blend butter and sugar with an electric mixer. Beat in eggs and vanilla. Add baking powder and flour one cup at a time, mixing after each addition. The dough will be very stiff. It may be necessary to blend the last cup of flour by hand. DO NOT CHILL DOUGH.

Baking Instructions: Divide dough into two balls. On a floured surface, roll each ball into a circle approximately 12" in diameter. Dough should be 1/8" thick. Dip cookie cutters in flour before each use. Pick up dough from around cut cookies. Place cookies onto ungreased cookie sheet with a spatula dipped in flour.

Bake on top rack of oven for 6-7 minutes until cookies are light brown. Remove cookies from sheet immediately after taking from oven. Makes approximately 20 cookies.

My mom dips the cookie cutters in powdered sugar and she rolls the dough out on a powdered sugar surface. She also uses her shiniest cookie sheets which helps the cookies bake evenly.

If you want to color the cookies yellow for Pac-Man, put food dye in the cookie mixture while it is still creamy. Or you can frost the cookies after they're baked with icing. Use a round cookie cutter to make circle shapes out of the rolled-out dough. Then cut slices (like you would see in a pie or pizza) out of each circle.

Put them in the oven and after they're done make an eye out of a raisin, or add lashes and a bow made of icing for Ms. Pac, and—*yum, yum!* Come to think of it, you had best make up two batches so that you'll have some left for your tournament.

If you're playing a Frogger tournament, you might want to use a frog-shaped cookie cutter; or use stars for a space game, decorate gingerbread men for Berzerk—let your imagination run wild!

Step four is to make a list of expenses, such as the cost for the prizes, refreshments, game rental (if you rent the cartridge) and last—but not least— your time. Charge the kids an admission fee, enough to cover your expenses and to make some money for yourself. For example, say your expenses add up to $7.50 and you invite seven kids. Make the admission fee $1.50 and, after paying your expenses, you make $3.00. Goodbye lemonade stand!

Step five is to invite the kids. Be sure to tell them to bring the admission fee!

Step six is to make a sign listing all the rules and post it. You don't want your

tournament turning into a riot! However, you can add a touch of humor to your sign. Mine read:

NO
1. Food, drinks or gum in play area (the living room)
2. Coaching
3. Misbehaving
4. Profanity
OR
Talking during tournament.
Violators will be ... beaten, shot, stabbed and trambled on ... survivors will be sent home!

Step seven is greeting the kids, explaining the rules and giving each one a five-minute practice time. You don't have to wait for everyone to get there to start the practice session. The most important thing is that everyone has the same amount of time. Set a timer to make it fair. The practice session for eight kids will take about an hour.

Step eight is the intermission/refreshment break. Everyone flexes his or her muscles, relaxes, eats, drinks and otherwise prepares for the real thing. During this time have each kid draw a number to determine the order of play in the tournament.

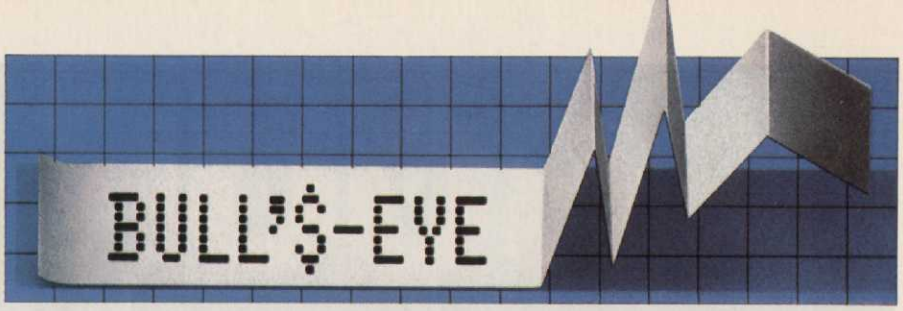
Step nine is the tournament play during which everyone takes a turn on the game. Be sure to record scores. If kids tie on a score, have them play a second game. The tournament play should last about an hour.

Step 10 is to award the prizes. To make it simple, the kid who comes in first picks first and so on down the line. I usually have two top prizes and then different types of candy bars for the other prizes. At my last tournament everyone won something.

Step 11 is to send everyone home as quickly as you can before your mom loses her cool and to clean up any messes. You want your mom to be in a good mood so that she'll let you have another tournament sometime soon.

Now, what can you do when the weather's miserable and there's nothing good on television? Right. Have a home video game tournament. But you say you don't *have* a game system? Then, on this day make a list of all the things you can do to earn money to buy one—rake leaves, gather and sell pecans (that's what I did), baby-sit, collect aluminum cans, etc.

Let me know how your tournament turns out. Write The Video Beat, Abilene Reporter-News, P.O. Box 30, Abilene, TX 79604. ▲



The New Contender

By David Leibowitz

Before there were video games, there were electronic games. While many, if not most, were primitive by today's standards, nevertheless they represented a radical change in game play. One of the acknowledged leaders in the field was Milton Bradley, creator of Simon, Electronic Battleship and Dark Tower. The company, whose reputation at the time was that of a stodgy manufacturer of board games and puzzles, had been largely overlooked by Wall Street. But, as sales and earnings started expanding, in a three-year period Bradley shares soared 350 percent, peaking at 50½ in 1980 as sales rose 120 percent and earnings advanced 130 percent. One other measure of the stock's popularity was that institutional investors purchased more than half the shares outstanding.

Yet, this very success was in large measure responsible for the company's equally fast fall from grace. The Pong games had laid the foundation for the first home game systems, such as Odyssey and the Atari 2600, and Bradley was not keeping pace. Not that it lacked the technology (a picture in its 1979 Annual Report shows a company employee at a television console playing a game); rather, management chose to stay with self-contained units at a time when the consumer was showing a clear preference for programmable video games. The result was to be expected. Sales and earnings declined and Milton Bradley's stock price dropped precipitously, touching a low of 14½ in early 1982.

But to paraphrase Mark Twain, the demise of Bradley as reported by Wall Street was a bit premature. Last summer the company acquired General Consumer Electronics (GCE), creator of the Vectrex video game system. This was followed by the announcement that Milton Bradley had reached an agreement with Texas Instruments to provide an Expander module for the 99/4A home computer, featuring a 64-key membrane key pad and speech synthesis/voice recognition capabilities, as well as 18 "voice command" cartridges for the 1983 and another dozen games in each of the next two years. Thus, in less than six months Bradley was back in the thick of the battle, and among its most vocal cheerleaders was Wall Street which had bid up the price of the company's shares to a high of 40½. Equally noteworthy, Bradley was trading at the highest price/earnings ratio of any of the video game manufacturers despite the fact that entering 1983 the company's total sales in this market had yet to reach $15 million.

Obviously, this vote of confidence is predicated on an anticipated superior earnings performance this year as well as in 1984. The cornerstone of this growth is expected to come from the liaison with Texas Instruments. In addition, as Bradley management pointed out at an analyst meeting held during last February's Toy Fair, the company has the freedom to produce Expander units for other home computer manufacturers, and to deliver the same titles of third-party software for other video game systems. It was also implied that some arrangement along these lines was already under consideration, and could lead to additional announcements before year's end. At the same time an expander for the company's own Vectrex system is a distinct possibility and industry scuttlebutt has it that a home computer module for Vectrex could be a reality within a year.

The question remains: Is all the optimism justified? Wall Street hasn't made management's job easier with some of the more bullish earning's projections currently in print. Estimates of 1983 earnings per share range from $3.75 to $4.25 versus $2.40 per share in

(Continued on page 77)

BOOK BEAT

This Isn't Kids' Stuff, This Is War!

By Anne Krueger

Life. It is just like in the arcades. You can keep from losing for a while, but you can never really win."

Those dreary words of suburban wisdom come from Zoz (real name Elmer)—a parent's nightmare of a kid who'd like nothing better than to play video games all day long, blowing wave after wave of argoffs away. When he's not hanging around the arcades, Zoz is dealing with his real-life problems (sex, adults) by inventing imaginary video games in his head.

In fact, if Zoz—the hero and narrator of Stephen Manes' new book, *Video War* (Avon, $2.25)—would have dreamed up a simple video game to describe this story's plot, it might have gone like this:

Video War. Insert Quarter. Press Player Number One.

It's you, the normal teenager, against your suburban town's bureaucratic biggies. Their goal: to shut down the local arcade. Yours is to stop them.

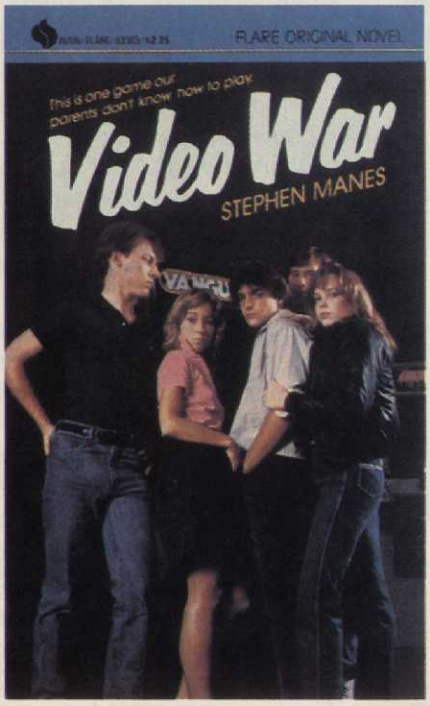
The joystick and fire button are all you need to position yourself at the bottom of the screen and blast the bad guys heading your way.

They progress downscreen knocking over the assorted arcade games in their path. Your defense against the bureaucrats' relentless attack is outweighed (after all, you're just a kid) by their speedy and powerful onslaught.

Hitting the occasional letters that speed across the top of the screen to spell VIDEO will momentarily freeze the bureaucrats, allowing you to pick them off with greater ease.

Hit five bureaucrats and the action again freezes, alloting you five seconds to run up and fix as many game machines as you can. But life is rough. When the bureaucrats knock over all 40 machines, you're sunk: you lose.

Game Over Player One.



Stephen Manes' book adds a new factor to the age-old tensions between adolescents and adults. Its conflict could be lifted from numerous newspaper headlines seen across the country: "Public Opinion Turns Against Video Games" or "City Council Votes to Close Arcades."

The author has Zoz telling the story in a first-person, stream-of-consciousness narration that contains some convincing dialogue along with a prolific use of four-letter words. Obviously Manes is trying to be hip for the under-20 crowd, but most readers are sophisticated enough to relate to the protagonists' dilemma without the surplus of expletives.

In the first screen (no chapters here), Zoz has suffered a major humiliation: His mother drags him out of Arnies, Bunker Hills Bluffs' local arcade, in front of his peers and publicly forbids him to continue his favorite recreation. To add insult to injury, she and her current boyfriend, the town councilman, band together to force the closing of everyone's favorite hangout.

Zoz at first deals with this dilemma in his usual fashion, skulking off to his bedroom and blowing off steam by inventing a game called Big Mama. The object is to use your joystick to shake the 300-pound mama off your back. (Most adults are thought of in this uncomplimentary manner).

But Zoz and his fellow players decide it's going to take more than daydreaming to shake mama and the town council. They declare war and form "Valley Individuals Defending Entertainment Options" (VIDEO, to you). How these kids fight an organized battle to win public acceptance of arcade games really is the meat of the book. Manes manages to make the kids' efforts—Zoz designs a VIDEO T-shirt, petitions are distributed, parades and arcade play-ins are planned—seem believable and refreshing. He paints such a depressing picture of suburbia, it's easy to understand why these kids (who don't seem to drink or take drugs) attack the arcade issue with such fervent "My God, they're taking away our freedom" stance. Arcade games *are* the only things that make life in Bunker Hills Bluffs bearable to these teenagers.

As for Zoz, playing video games is the only time he really seems to get a grip on things and feel in control. His home life

could accurately be described as miserable; he has a lousy job making weird concoctions out of potato skins at Spudville, and he doesn't have a steady girlfriend. Manes is in his element here: He seems to have his finger on the pulse of everyday high school life as he delineates each detail of adolescent minutia.

But Manes loses his touch when it comes to Zoz's boy/girl relationships. One encounter that culminates in a sex scene with Jenny, the pretty and brash organizer of VIDEO, seems especially senseless to the scheme of things. Kids may have one-night stands but this one seems particularly ungratifying to Zoz and to the book's story lines.

In a more diverting sideline to the main plot, Manes has Zoz developing a slow but steady relationship with Rowena, a less-glamorous VIDEO member. At first Zoz calls Rowena "a loner, spelled l-o-s-e-r," mainly based on the fact that she's quiet and wears baggy clothes (Zoz is at that age where he'd like all females to be required to be naked). During Zoz's scalding description of Rowena, he off-handedly says, "Did I mention she's black?" indicating that's not why he's not interested—it's just everything else about her that seems to turn him off.

But Zoz starts spending more time with Rowena when he discovers she's a computer whiz and has loads of expensive equipment. It's Rowena who shows Zoz how to program games and gives him the idea of possibly using his artistic talents in that area.

As Zoz gets to know Rowena, he all-too-quickly sheds his macho chauvinism and the reader is supposed to believe his episode with Jenny may account for his sudden realization that there's more to life than instant gratification.

Still, it's hard to swallow the stereotype of Rowena as the poor little girl whose parents buy her expensive computers because they're too busy for her. It's a little like Manes thought a book revolving around a video games conflict needed colorful subplots to keep it going.

But *Video War* doesn't glorify these kids or offer a too-rosy conclusion. The VIDEO group discovers everything good they can do can be undone by someone else. And when the city council decides to keep the arcades open, they realize it has little to do with the kids' efforts and a lot to do with sleazy politics.

Such is life, Zoz would say. But to top that, Arnie—the owner of the town's arcade and VIDEO's only adult pal in the book—turns around and hikes the game prices to fifty cents, reinforcing Zoz's feelings that most adults are pretty stinko.

So maybe Zoz is right when he says life in Bunker Hills Bluffs, and everywhere else for that matter, is like being in the arcade: you can never really win. But you've got to keep fighting those argoffs while you can. ▲

Bull's-Eye

(continued from page 75)

1982, and looking out to 1984 the figure jumps to the $5.00 range and even higher. Given the company's recent stock price of $38 per share those estimates do not leave much margin for error. Given the present situations at Warner Communications and Mattel, lower-than-anticipated earnings could have a devastating effect on stock prices. Milton Bradley has already taken the ride on that merry-go-round. This time it's looking to grab the gold ring. ▲

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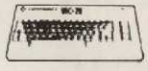

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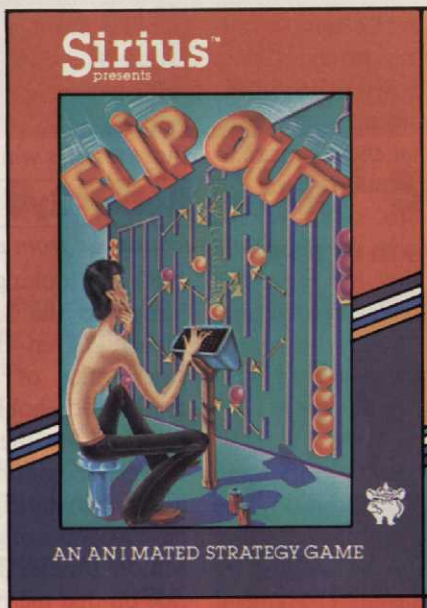
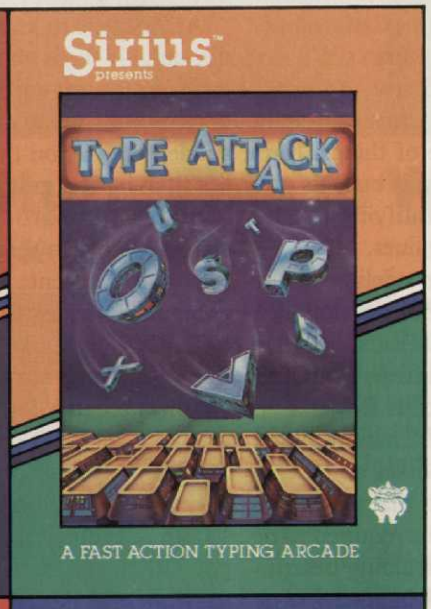
Have A Great Playday!

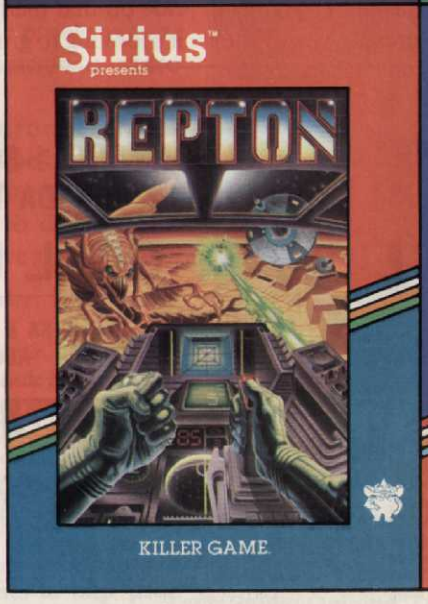
Take your marble to the top. Pick your spot and let it drop. Hope for a flip instead of a flop. Once you get it, the fun never stops! It's FLIP OUT — a crazy new strategy game for one or two players. Each marble you drop causes a chain reaction, so take your time and plan carefully. Plan right and you'll flip, if you didn't you Flip Out!

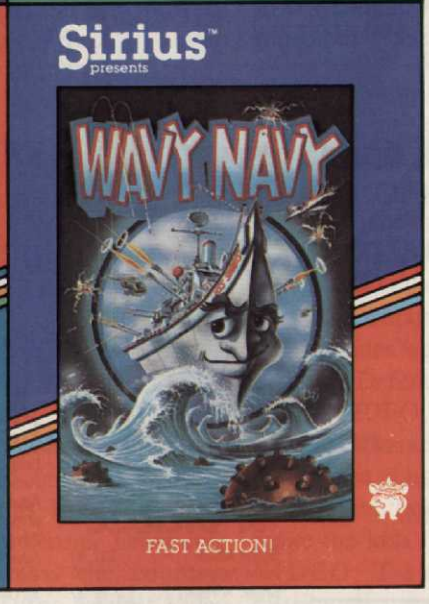




Turn your keyboard into a typing arcade! You can blast attacking letters and words right out of the sky. Type Attack was designed by a professional educator and the fast action game experts at Sirius. It features 39 preprogrammed lessons and 60 user defined lessons. Great sound, graphics and a real-time words per minute bar make improving your typing skills fun!

It is up to you to stop the invasion of the evil Quarriors and save Repton. You are armed with devastating Nuke Bombs, a Radar Screen, a Laser Gun and an Energy Shield. You'll need them all! You'll be attacked by Nova Cruisers and Single Saucers. You must avoid Spye Satellites and deadly Dyne-Beam Shooters and you must stop the Draynes from depleting the Reptonian power supply. Repton is a battle so thrilling you'll be relieved to find out you're still on earth when it's over!





Talk about adventure on the high seas! You're blasting away at a squadron of enemy bombers and Kamikaze fighters from the deck of your P.T. boat. Suddenly you notice the sea is loaded with mines and an Exocet missile is screaming toward you on the horizon. Instinctively you jerk the joystick to the starboard, keeping your thumb on the fire button. Phew! That was close! Sometimes it's hard to believe Wavy Navy's just a video game.

New Games For Your Apple II From Sirius™

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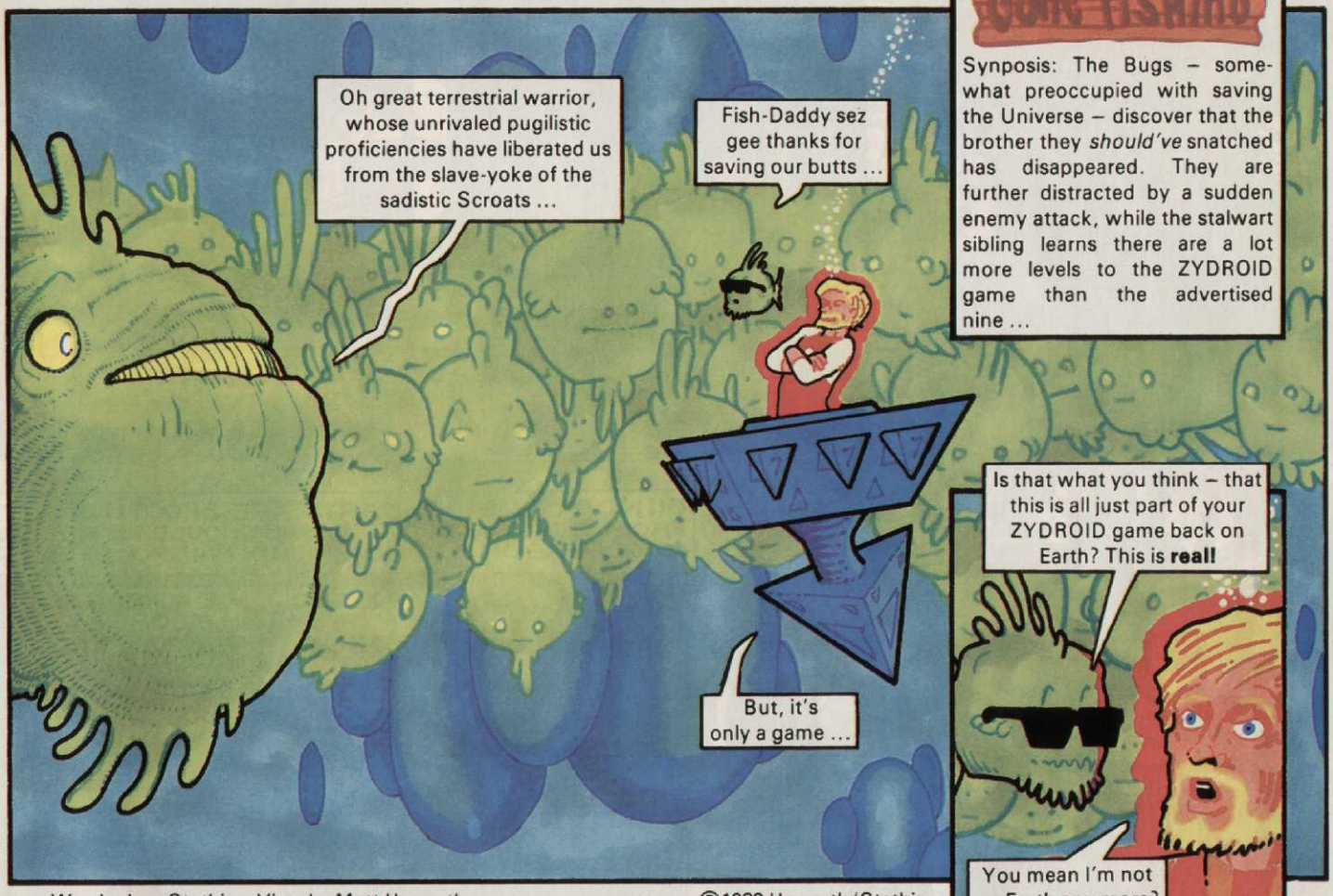
For more information contact your local Sirius dealer or distributor or contact us at 10364 Rockingham Drive, Sacramento, CA 95827, (916) 366-1195.

THE ZYDROID LEGION

Chapter Six:

Gone Fishing

Synposis: The Bugs – somewhat preoccupied with saving the Universe – discover that the brother they *should've* snatched has disappeared. They are further distracted by a sudden enemy attack, while the stalwart sibling learns there are a lot more levels to the ZYDROID game than the advertised nine ...



Words: Lou Stathis Visuals: Matt Howarth

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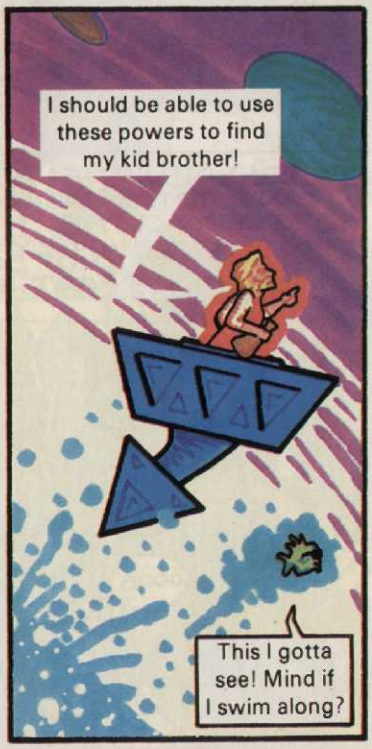
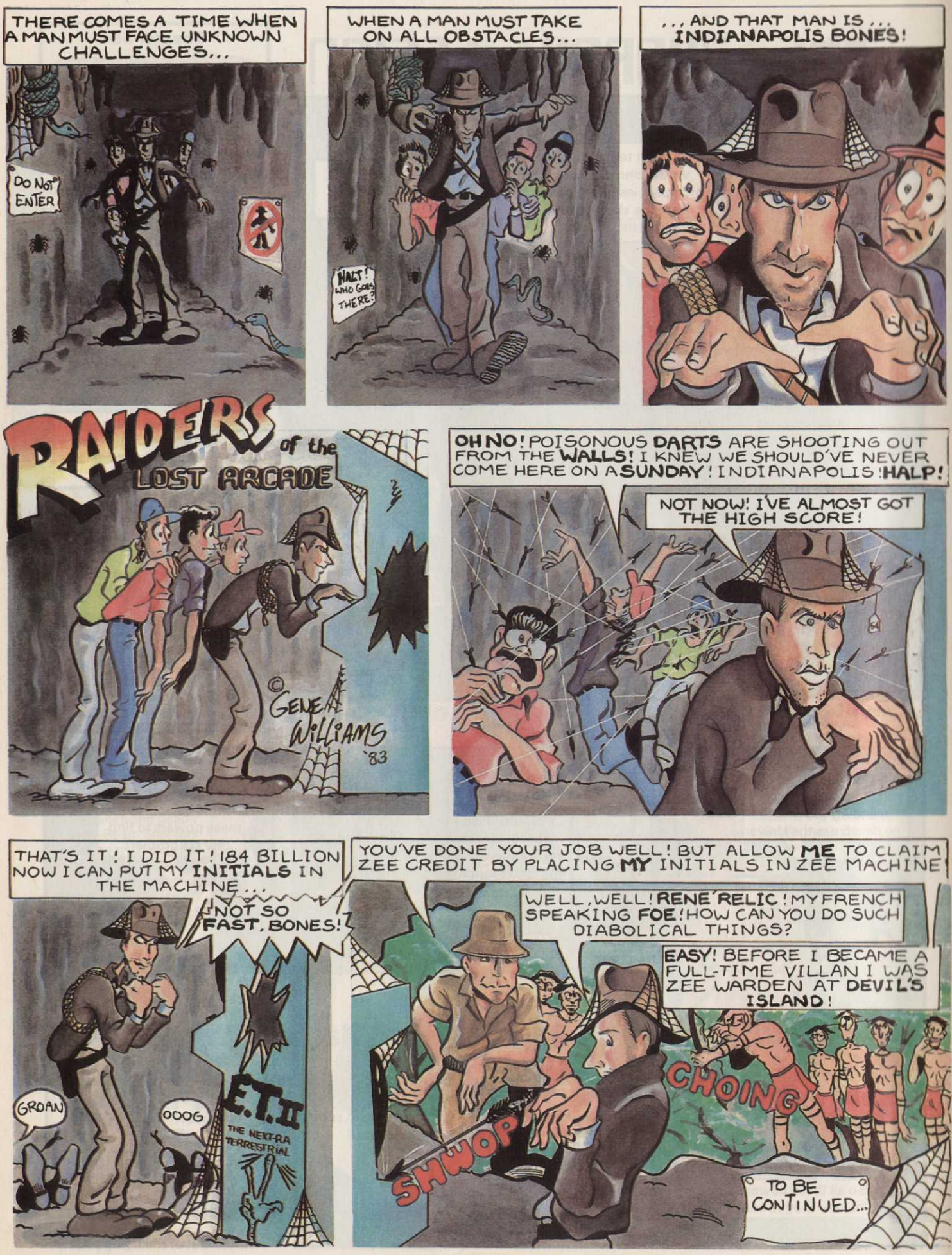
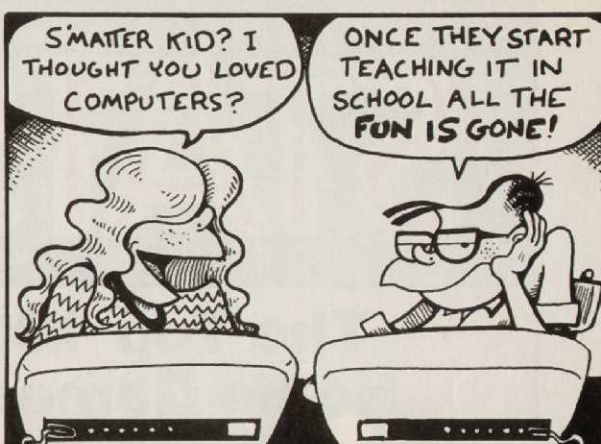


NEXT: Out of the frying pan ...


THERE COMES A TIME WHEN A MAN MUST FACE UNKNOWN CHALLENGES...
DO NOT ENTER
WHEN A MAN MUST TAKE ON ALL OBSTACLES...
HALT! WHO GOES THERE?
...AND THAT MAN IS... INDIANAPOLIS BONES!
RAIDERS of the LOST ARCADE
©GENE WILLIAMS '83
OH NO! POISONOUS DARTS ARE SHOOTING OUT FROM THE WALLS! I KNEW WE SHOULD'VE NEVER COME HERE ON A SUNDAY! INDIANAPOLIS! HALP!
NOT NOW! I'VE ALMOST GOT THE HIGH SCORE!
THAT'S IT! I DID IT! 184 BILLION NOW I CAN PUT MY INITIALS IN THE MACHINE...
NOT SO FAST, BONES!
GROAN
OOOG
E.T.II THE NEXT-RA TERRESTRIAL
YOU'VE DONE YOUR JOB WELL! BUT ALLOW ME TO CLAIM ZEE CREDIT BY PLACING MY INITIALS IN ZEE MACHINE!
WELL, WELL! RENE RELIC! MY FRENCH SPEAKING FOE! HOW CAN YOU DO SUCH DIABOLICAL THINGS?
EASY! BEFORE I BECAME A FULL-TIME VILLAN I WAS ZEE WARDEN AT DEVIL'S ISLAND!
CHOING
SHWOP
TO BE CONTINUED...

THE
VIDEO
KID.
©1983
BY
PETER
BAGGE


S'MATTER KID? I THOUGHT YOU LOVED COMPUTERS?
ONCE THEY START TEACHING IT IN SCHOOL ALL THE FUN IS GONE!

HEY KID, YA WANNA COME OVER TO MY HOUSE AFTER SCHOOL? THEY'RE SHOWING "TRON" ON HBO!
YEAH, OKAY.

YOU KNOW WEINER, WE'VE ALREADY SEEN THIS MOVIE 37 TIMES! WHY DON'T WE DO SOMETHING ELSE!
OKAY, LET'S HIT THE ARCADES!

LATER...
LET'S GET OUT OF HERE!
WHAT?!? WE JUST GOT HERE!!

ALL WE EVER DO IS 'HIT THE ARCADES'! I'M SICK OF IT! CAN'T WE THINK OF ANYTHING ELSE TO DO?!?
LIKE WHAT?!?
YOU CAN GO IF YOU WANT! I'M HAVING FUN!

ALL THIS TECHNOLOGY IS GETTING TO ME!
I'M ACTUALLY LOOKING FORWARD TO CAMP THIS YEAR! I COULD USE SOME NATURE!

MEANWHILE....
HERE HE COMES NOW!
HE'LL BE SO SUPRISED!

SON, WE'VE DECIDED TO SEND YOU TO ONE OF THOSE NEW COMPUTER CAMPS THIS SUMMER!
ISN'T THAT WONDERFUL?

EYAAH!

POOR GUY! HE'S OVERCOME WITH EXCITEMENT!
ZOOM!
POOF!

STATS

The Top 10 Home Games

Mar. 19	Mar. 5	Weeks on Chart	
1	7	4	Ms. Pac-Man (Atari)
2	1	26	Pitfall (Activision)
3	2	9	River Raid (Activision)
4	4	9	Vanguard (Atari)
5	3	28	Frogger (Parker Brothers)
6	5	28	Donkey Kong (Coleco)
7	11	4	Phoenix (Atari)
8	8	28	Pac-Man (Atari)
9	10	5	Spider Fighter (Activision)
10	6	7	Dragon Fire (Imagic)

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These are the best-selling home video games compiled from outlets by the Billboard research department.

The Top 14 Arcade Games

March 15, 1983

*1. Pole Position (Atari)
*2. Front Line (Taito)
*3. Popeye (Nintendo)
*4. Time Pilot (Centuri)
5. Super Pac-Man (Bally/Midway)
*6. Baby Pac-Man (Bally/Midway)
7. Q*bert (Gottlieb)
8. Joust (Williams)
9. Pac-Man Plus (Bally/Midway)
10. Ms. Pac-Man (Bally/Midway)
*11. Moon Patrol (Williams)
*12. Millipede (Atari)
13. Jungle Hunt (Taito)
14. Galaga (Bally/Midway)

© 1983 by Play Meter Magazine

These are the top earning arcade games according to a poll of operators. Those with asterisks indicate operator responses were between 25-50 percent.

High Scorers

Baby Pac-Man	2,282,610	Charles Kirby Decatur, Ala.
Bagman	87,800	Steve Bernhardt Kenosha, Wis.
Buck Rogers	313,330	Bruce Borsato Trail, B.C., Can.
Burgertime	4,163,250	Chuck Coss Stubenville, Ohio
Centipede	15,207,353	Darren Olson Calgary, Alberta, Can.
Defender	75,865,375	Joe Carson Cheektowaga, N.Y.
Dig Dug	4,129,600	Ken Arthur Blackburg, Va.
Donkey Kong Jr.	951,000	Matt Brass Bozemar, Mont.
Frenzy	4,789,909	Mike Mann Oak Park Heights, Mn.
Front Line	187,000	Jeff Peters Rancho Cucamonga, Calif.
Gorf	2,220,000	Jason Smith Midland, Tx.
Gravitar	4,722,200	Raymond Mueller Boulder, Colo.
Joust (new Chip)	33,167,250	Bob Weiss San Jose, Calif.
Jungle Hunt	983,430	Dan Cook Woodbridge, Va.
Liberator	1,449,350	Sean Middleton Anchorage, Alaska
Lost Tomb	1,072,980	Mark Rasmussen Ft. Dodge, Ia.
Millipede	1,506,684	Eric Ginner Milpitas, Calif.
Monster Bash	445,800	George Rassmussen Kenosha, Wis.
Moon Patrol	577,480	Eric Ginner Mountain View, Calif.
Mr. Do	1,365,450	Scott Hunter Arlington, Tx.
Ms. Pac-Man	388,190	Michael Buck Ottumwa, Ia.
Pac-Man Plus	215,220	Kevin Pollock Upland, Calif.
Pengo (4 men)	809,990	Kevin Leisner Racine, Wis.
Pole Position	65,460	Mike Klug San Jose, Calif.
Popeye	219,850	Steve Harris Bladstone, Mo.
Q*bert	14,324,565	Rick Carger Salisbury, Md.
Quantum	1,029,160	Judd Boone Moscow, Idaho
Rescue	419,555	Roddy Rodolfo Ft. Worth, Tx.
Robotron	252,115,350	Eddie O'Neil Durham, N.C.
Satan's Hollow	8,692,035	Michael Ward Madison, Wis.
Star Trek	974,475	Robert Purser Norcross, Ga.
Super Pac-Man	456,190	Kevin Fischer Dunkirk, Mo.
Time Pilot	1,892,000	John Roberts Plattsburgh, N.Y.
Xevious	230,790	David Knight Upland, Calif.

Our thanks to Walter Day, Jr. of Twin Galaxies International Scoreboard (226 East Main St., Ottumwa, Ia. 52556). Readers who think they may have a high score should send a self-addressed stamped envelope to Walter Day, who will then forward the necessary information and forms.

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Are you hot enough? You'll have to be sharp. Because as you get better the Xevious forces get more devious! More dangerous!

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